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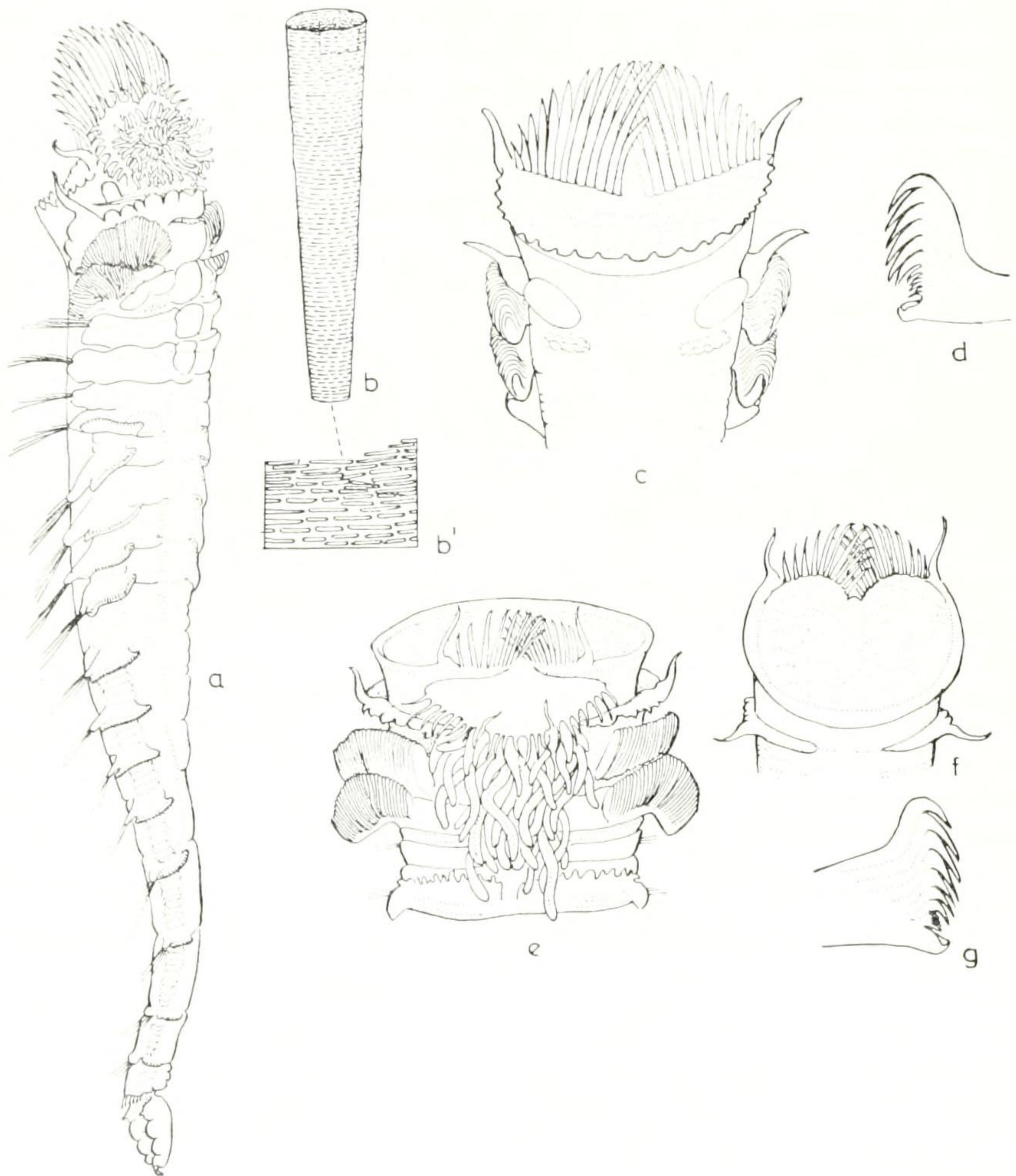


FIG. 34.2. *Pectinaria (Amphictene) capensis*. (A) Entire worm (twice life size). (B, B¹) Tube with part magnified to show details. (C) Dorsal view of head. (D) Uncinus. *Pectinaria (Pectinaria) papillosa*. (E) Ventral view of head with the veil folded down over the mouth. (F) Dorsal view of head. (G) Uncinus.

Pectinaria (*Pectinaria*) *papillosa* Caullery, 1944*
(fig. 34.2.e-g)

Pectinaria papillosa Caullery, 1944: 71; Day, 1951: 55, fig. 8 a.

A large stout species reaching a length of 60 mm. and 16 mm. across the operculum. Rim of cephalic plate smooth (fig. 34.2.f); 13 + 13 golden paleae. Cephalic veil (fig. 34.2.e) joined to the operculum medially but quite free from the bases of the tentacular cirri laterally. About 46 velar cirri. Both pairs of tentacular cirri small, the second pair being lateral in origin and mounted on a flange which extends from the dorso-lateral surface across the ventrum immediately behind the mouth. The ventral part of the flange has a smooth margin. The second setiger also has a prominent ventral ridge. Three anterior segments with notosetae only. Thirteen abdominal segments with both notosetae and uncini followed by one prescapal segment with only a small bundle of notosetae. Three to four strongly curved scaphal hooks on each side. Scaphe oval, edges scalloped, surface papillose. Anal ligule cordate. No anal cirrus (? lost). Notosetae stout with narrow hispid wings and spinulose tips. Uncini (fig. 34.2.g) with two rows of about seven major teeth followed by two to three rows each with three minor teeth preceding the basal gouge. Tube composed of coarse, irregularly arranged sand grains.

TYPE LOCALITY: East Indies.

RECORDS: Mocambique (26/32/i).

DISTRIBUTION: East Indies.

*Very close to *P. antipoda* Schmarda.

Family **AMPHARETIDAE** Malmgren, 1867

Tubicolous worms living in fragile tubes of sandy mud. Body tapered and divided into two regions. Prostomium well developed, often with eyes but without sensory appendages. Mouth with numerous buccal tentacles for deposit feeding. Peristomium and the next segment achaetous and often partly fused. Segments III–VI primitively bear segmentally arranged dorsal branchiae but these are often reduced in number and concentrated in a transverse row across segment III. Similarly one or more bundles of setae may be reduced or absent from segments III–VI. Segment VII and 10–13 succeeding thoracic segments bear both notopodial capillaries and neuropodial uncini. Abdominal segments without notosetae but with uncini. Pygidium often with anal cirri.

BIOLOGICAL NOTES

The ampharetids are deposit feeders which gather food particles from the surface of the sand or mud by means of buccal tentacles which can be extruded from the mouth. They construct fragile tubes of mud or sometimes sand grains and attach them to sponges, compound ascidians or the shells of living molluscs. They are seldom found on stones and very few ampharetids live in shallow water but they become common with increasing depth.

THE MAIN DIAGNOSTIC CHARACTERS

Reviews of the family and keys to the genera will be found in Hessle (1917), Chamberlin (1919), Fauvel (1927), Uschakov (1957) and Day (1964). It is important to note that Hessle and Uschakov regard the paleal (or first branchiferous) segment as segment II whereas the other workers quoted regard the paleal segment as segment III. This is also the view adopted in the present work.

The important taxonomic characters include the structure of the prostomium, the nature of the buccal tentacles, the branchiae, the setation of segments III to VI, the number of uncigerous thoracic segments, the number of abdominal segments and the structure of their parapodia, the shape of the uncini and the development of the anal cirri.

The head and buccal tentacles. The *prostomium* (or tentacular membrane of Hessle) is a flattened hood over the mouth and bears eyes, nuchal slits and sometimes a pair of *glandular ridges* which diverge outwards towards the antero-lateral margins. The buccal *tentacles* arise from the upper lip and may be retracted into a special cavity above the true mouth. The tentacles themselves are papillose or smooth with a groove along one side as in the Terebellidae. In a few species the tentacles are borne by an eversible probosciform lobe or tongue (fig. 35.2.a).

The branchiae, nephridia and setation of segments III–VI. The four branchial segments are often telescoped or partially fused and some of the branchiae and bundles of setae may be missing. Primitively there are four pairs of segmentally arranged gills as is shown by the blood vessels but in many genera the gills are concentrated to form a transverse row mounted on a *branchial ridge* across segment III. Further the number

of paired gills may be reduced from four to three or even two. The individual gills are usually smooth and tapering but in certain species they may bear rows of small lamellae or papillae. The number of nephridia may be reduced in the same way as the gills, and in *Sabellides* the enlarged anterior pair of nephridia open on a pair of prominent *nephridial papillae* mounted on the branchial ridge between the right and left groups of gills. In *Anobothrus* the two nephridia open on a single median papilla.

In the subfamily Melinninae the neurosetae of the branchial segments take the form of minute *acicular setae* deeply embedded in a lateral fold which slants upwards and backwards from below the mouth to the sides of segment VI. The two folds are united by a *dorsal crest* across segment VI. In the subfamily Ampharetinae neurosetae are entirely lacking from the branchial segments and even the notosetae may be reduced or lacking from some segments. Segment IV very often lacks notosetae and is fused to segment III. Segment III itself may lack notosetae and even segment V. On the other hand segment III may develop enlarged notosetae called *paleae* which project forwards on either side of the gills.

The uncigerous thoracic segments. Segment VII always bears both notopodial capillaries and neuropodial uncini so that it is the most reliable landmark on the body. The number of uncigerous thoracic segments is constant for each genus and thus a most useful taxonomic character. The notopodia are usually simple conical projections bearing bundles of winged capillaries, but in *Amphicteis* and certain other genera each notopodium has a small terminal papilla or *notopodial cirrus* which is quite distinctive. The neuropodia are small square uncigerous pinnules below the notopodia. Like the notopodia they may also bear superior papillae though these are seldom so obvious as those on the notopodia.

The abdomen and the anal cirri. Abdominal segments may be distinguished from thoracic ones by the lack of notosetae. In most species the entire notopodium is lacking but in some it persists in a rudimentary form for a few segments or on all segments to the pygidium. Occasionally the notopodial cirrus persists even though the notopodium itself is lacking. The neuropodium is present as an *uncigerous pinnule* on every abdominal segment; in fact it tends to elongate so that the last few uncigerous pinnules are the longest of the whole body. The same is true of the superior papilla of the neuropodium which is usually minute on the thorax but may become a long cirriform organ after the third abdominal segment. This is well shown by *Sabellides octocirrata*. It is important to distinguish this *neuropodial cirrus* from the *rudimentary notopodium* above it by examining the parapodia at the junction of the thorax and abdomen.

The number of abdominal segments varies from over 50 in many species of the subfamily Melinninae to as few as 10 in some of the Ampharetinae. The approximate number is of systematic value in the Ampharetinae. The pygidium may be quite simple with only a few indistinct papillae around the anus or it may develop long *anal cirri*. Commonly there is only one pair of these but two, three or even four pairs may be present.

The setae. As noted, the notosetae of segment III may be enlarged to form conspicuous *paleae* or they may remain small or may be absent. With few exceptions

the notosetae of subsequent thoracic segments are winged capillaries which are so uniform in structure that they are of little systematic value. In several genera of the Melinninae however, the notosetae of segment IV are modified to form a pair of stout *postbranchial hooks*. Again in a few genera of the Ampharetinae one or more of the posterior notopodia is elevated above the rest and the notosetae are modified – usually the blades develop spinules.

The neurosetae of the branchial segments of the Melinninae are minute and acicular and deeply embedded in the flesh. In the Ampharetinae, neurosetae are entirely absent from segments III to VI. Subsequent thoracic segments all bear uncini. These are toothed plates which are quadrangular to triangular in outline with one, two or more series of teeth above the small *rostral point* and *basal prow*. In many species the rostral point is like a small tooth and may be mistaken for the lowermost of the series but in species of *Melinna* it is obviously an attachment organ and in species with two or more series of teeth the rostral point is always single and median. The basal prow may project forwards as a continuation of the base or may be short and curve upwards so that its blunt apex almost meets the rostral point. The number of teeth above the rostral point is very constant in the thorax but usually increases in the abdomen. There is a single vertical series of teeth in the Melinninae and in several genera of the Ampharetinae. Other genera have two or three series but rarely more.

KEY TO SUBFAMILIES

- 1 Segments III–VI (or III–V) with fine acicular neurosetae. Post-branchial hooks may be present. No paleae MELINNINAE (p. 689)
 – Segments III–VI without neurosetae. No post-branchial hooks. Paleae may be present AMPHARETINAE (p. 693)

Subfamily **MELINNINAE** Chamberlin, 1919

Buccal tentacles never papillose, usually smooth with a groove along one side. Paleae absent. One or two pairs of stout notopodial hooks may be present behind the gills. Small acicular neurosetae embedded in segments III–V and sometimes VI. Uncini always with a single series of teeth. Numerous (20–90) abdominal segments.

Records from southern Africa

<i>Isolda pulchella</i> Müller	56Cs
<i>Isolda whydahensis</i> Augener	26Ai
<i>Melinna cristata</i> (Sars)	48Cd
<i>Melinnopsides capensis</i> (Day)	
as <i>Melinnopsis capensis</i> Day	44Ci

KEY TO GENERA

- 1 Stout notopodial hooks behind the gills (fig. 35.1.i) 2
 – Notopodial hooks absent 4
 2 Four pairs of gills 3
 – Three pairs of gills (one smooth, two pennate) **IRANA***

- 3 All gills smooth *MELINNA* (p. 689)
- Some gills smooth, some pennate (fig. 35.1.k) *ISOLDA* (p. 691)
- 4 Four pairs of smooth gills *MELINNOPIS**
- Three pairs of smooth gills *MELINNOPSIDES* (p. 692)

MELINNA Malmgren, 1866

Buccal tentacles smooth with a groove along one side. Four pairs of smooth gills. A dorsal crest across segment VI. Segments III–VI with notopodial hooks on segment IV and notopodial capillaries on segments V and VI. Fine acicular neurosetae on segments III–V and sometimes on VI as well. Fourteen uncigerous thoracic segments and 30–50 abdominal ones. Thoracic uncini with a single series of teeth.

TYPE SPECIES: *Sabellides cristata* Sars, 1851.

KEY TO SPECIES

- 1 Numerous buccal tentacles (fig. 35.1.i). Membrane across segment VI crenate 2
- One large buccal tentacle (fig. 35.1.a). Membrane across segment VI smooth *M. monoceroides*
- 2 Neurosetae present on segment VI. Branchial filaments united for less than half their length *M. cristata*
- Neurosetae absent from segment VI. Branchial filaments united for more than half their length *M. palmata**

Melinna monoceroides Fauvel, 1936
(fig. 35.1.a–b)

Melinna monoceroides Fauvel, 1936: 93, fig. 12 a–d.

Body up to 17 mm. long. Prostomium (fig. 35.1.a) trilobed, without eyes or glandular ridges. A single greatly enlarged tentacle arising from the upper lip. Branchiae in two groups of four, three of which are united for half their length and arranged in a semicircle around the fourth. Individual gills long and smooth, projecting far beyond the prostomium. Segments III–V (and possibly VI) with fine neuropodial acicula. Segment IV with stout notopodial hooks; segments V and VI with fine notopodial capillaries. Transverse dorsal ridge across segment VI forming a deep pocket with a smooth margin. A total of 14 uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.1.b) with a single series of five to six teeth above the very small rostral point and basal prow. Number of abdominal segments unknown. Abdominal neuropodia without superior cirri. Pygidium unknown.

TYPE LOCALITY: Dredged in 224 m. off Morocco.

RECORDS: Not recorded from southern Africa.

DISTRIBUTION: Morocco (d); Angola (s).

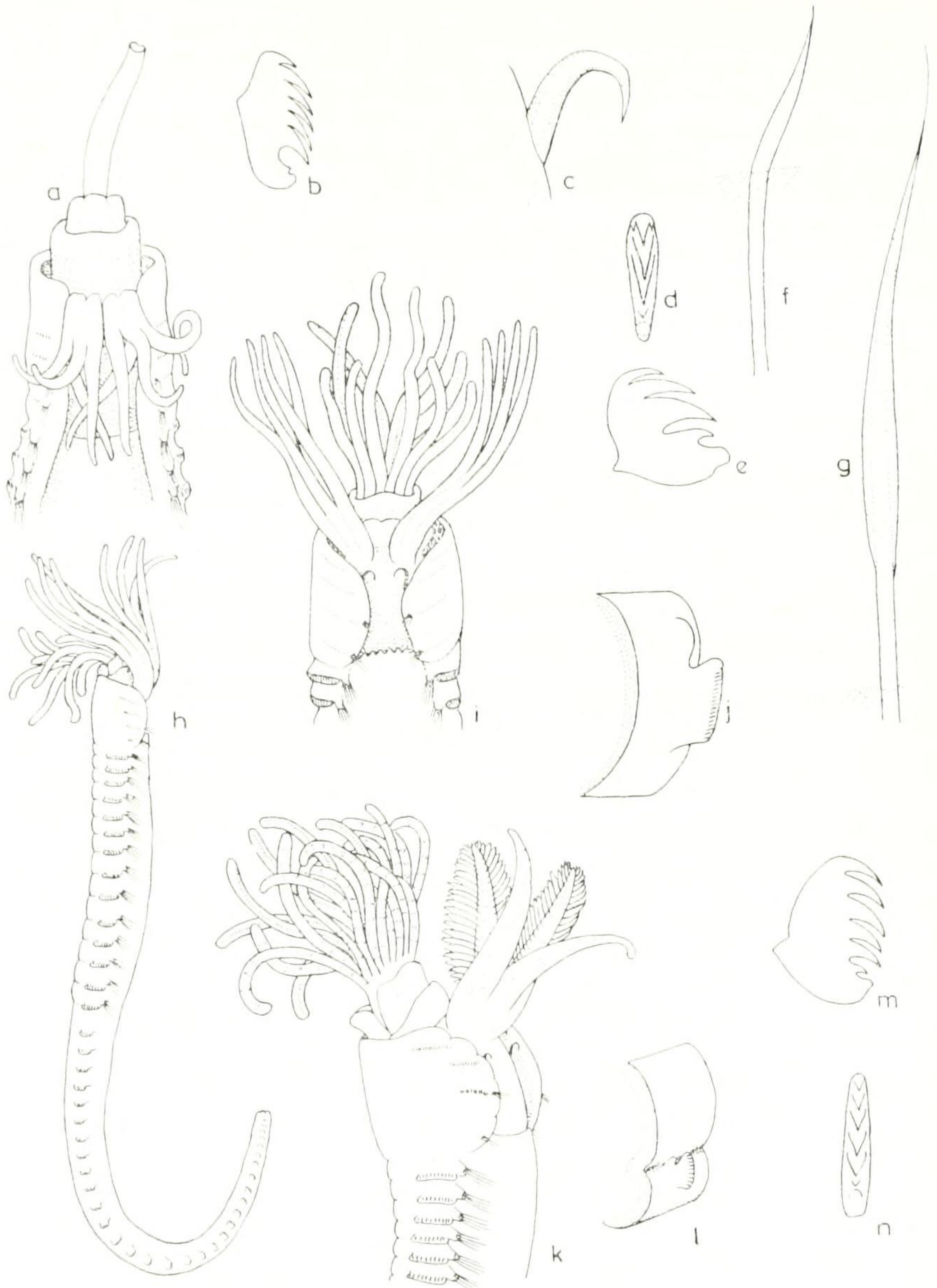


FIG. 35.1. *Melinna monoceroides* (modified from Fauvel, 1936). (A) Anterior end. (B) Thoracic uncinus. *Melinna cristata*. (C) Post-branchial hook. (D, E) Edge-on and profile of thoracic uncinus. (F) Neuropodial acicular seta. (G) Winged notopodial capillary. (H) Entire worm (three times life size). (I) Anterior end. (J) Abdominal parapodium. *Isolda pulchella*. (K) Anterior end with tentacles fully extruded (gills on right side omitted). (L) Abdominal segment showing parapodium. (M, N) Profile and edge-on view of thoracic uncinus.

Melinna cristata (Sars, 1851)
(fig. 35.1.c-j)

Sabellides cristata Sars, 1851: 205.

Melinna cristata: Hessle, 1917: 92; Fauvel, 1927: 237, fig. 83 i-n.

Body (fig. 35.1.h) tapered, up to 50 mm. long. Prostomium with eye-spots. Buccal tentacles smooth with a groove along one side (fig. 35.1.i). Branchiae in two separate groups of four each, united by a web for less than half their length. Segments III-VI all with fine neuropodial acicula (fig. 35.1.f) embedded in the flesh. Segment IV with stout notopodial hooks (fig. 35.1.c); both segments V and VI with notopodial capillaries (fig. 35.1.g). A total of 14 uncigerous thoracic segments starting from segment VII. Transverse dorsal ridge across segment VI with a dentate margin. Thoracic uncini (fig. 35.1.d) with a single series of three to four teeth above the small rostral point and a basal prow and sometimes with a crest of three to five teeth (fig. 35.1.d). Thirty to fifty abdominal segments with uncigerous pinnules and small rudimentary notopodia (fig. 35.1.j). No anal cirri.

TYPE LOCALITY: 550 metres off Norway.

RECORDS: Cape (32/17/d).

DISTRIBUTION: Arctic; North Atlantic from Greenland (s, d, vd) and Norway (vd) to the English Channel (e, s) and North Carolina (s); boreal North Pacific from Alaska to N.W. Japan; subantarctic (d).

ISOLDA Müller, 1858

Buccal tentacles smooth with a groove along one side. Four pairs of gills of which two are smooth and two are pennate. A dorsal crest across segment VI. Segments III-VI with notopodial hooks on segment IV and notopodial capillaries on segments V and VI. Fine acicular neurosetae on segments III-V and sometimes on VI as well. Twelve to thirteen uncigerous thoracic segments and 25-36 abdominal ones. Thoracic uncini with a single series of teeth.

TYPE SPECIES: *Isolda pulchella* Müller, 1858.

KEY TO SPECIES

- | | | |
|---|--|------------------------|
| 1 | Thirteen uncigerous thoracic segments. Inner two pairs of gills with two rows of long lamellae (fig. 35.1.k) | <i>I. pulchella</i> |
| - | Twelve uncigerous thoracic segments. Inner two pairs of gills with many minute lamellae (fig. 35.2.a) | <i>I. whydahaensis</i> |

Isolda pulchella Müller, 1858
(fig. 35.1.k-n)

Isolda pulchella Müller, 1858: 219; Augener, 1918: 517, pl. 7 fig. 229, text-fig. 88; Day, 1963a: 434.

Body up to 45 mm. long, brown in alcohol with barred tentacles. Prostomium snout-like. Eye-spots minute. Buccal tentacles smooth with a groove along one side (fig. 35.1.k). They arise from a horizontal shelf in the roof of the mouth. Stout

lateral folds embrace the branchiferous region. Transverse ridge across segment VI with a smooth margin. Branchiae in two groups of four, each united basally; inner two pairs of gills with two rows of long lateral lamellae. Fine acicular neurosetae on segments III–V but not VI. Stout notopodial hooks on segment IV. Small notopodial capillaries on segments V and VI. A total of 13 uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.1.m, n) with a single series of five to six teeth above the small rostral point and projecting basal prow. Abdomen with 32 or more segments each with a square uncigerous pinnule above which is a small papilla (fig. 35.1.l).

TYPE LOCALITY: St. Catherine Is., Brazil.

RECORDS: Cape (34/23/s).

DISTRIBUTION: North Carolina (s); Brazil; S.W. Australia (s); Burma.

Isolda whydahaensis Augener, 1918
(fig. 35.2.a–d)

Isolda whydahaensis Augener, 1918: 514, pl. 7 fig. 216, text-fig. 87.

A small species about 5 mm. long. Head (fig. 35.2.a) snout-like with a triangular prostomium. Eyes not seen. Tentacles short, grooved and mounted on a protrusible "tongue" arising from the roof of the mouth. A pair of lateral folds embrace the branchiferous region. Dorsal ridge across segment VI with a smooth margin. Branchiae long and slender, arranged in two groups of four which are united basally. Inner two pairs of branchiae stouter than the two outer and beset with numerous minute lamellae (fig. 35.2.c). Fine acicular neurosetae embedded in segments III–V but not VI. Segment IV with stout notopodial hooks, segments V and VI with notopodial capillaries. A total of 12 uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.2.b) with a single series of five to six equal teeth above the small rostral point and projecting prow. Abdominal uncini usually with two rows of teeth. Abdominal segments numerous and bear square uncigerous pinnules (fig. 35.2.d).

TYPE LOCALITY: Whyda, tropical western Africa.

RECORDS: Not recorded from South Africa.

DISTRIBUTION: Western Africa from Morocco (s) to Angola (i, s, d).

MELINNOPSIS Day, 1964

Buccal tentacles smooth with a groove along one side. Three pairs of smooth gills. No dorsal crest on segment VI. Segments III–VI without notopodial hooks on segment IV but with notopodial capillaries on segments V and VI. Fine acicular neurosetae on segments III–V but not VI. Ten uncigerous thoracic segments and about 30 abdominal ones. Thoracic uncini with a single series of teeth.

TYPE SPECIES: *Melinnopsis capensis* Day, 1955.

Melinnopsides capensis (Day, 1955)
(fig. 35.2.e-f)

Melinnopsis capensis Day, 1955: 433, fig. 5 d-g.

A small species about 6 mm. long. The worms are gregarious and live in sandy tubes attached to corallines. Prostomium (fig. 35.2.f) arched with a rounded anterior margin. Two to three pairs of eyes. Three pairs of smooth cirriform gills all united basally to form a continuous row of six across segment III. Segments III-V (but not VI) with fine neuropodial acicula embedded in the flesh. Segments V and VI with notopodial capillaries. No notopodial hooks on segment IV. No dorsal crest on segment VI. Ten uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.2.e) with a single vertical series of five teeth above the small rostral point and basal prow. Twenty-eight abdominal segments with square uncigerous pinnules. No rudimentary notopodia.

TYPE LOCALITY: Plettenberg Bay, South Africa.

RECORDS: Cape (34/23/i).

DISTRIBUTION: Endemic.

Subfamily **AMPHARETINAE** Chamberlin, 1919 (emend. Day, 1964)

Buccal tentacles either smooth with a groove along one side or papillose. Paleae present or absent. No notopodial hooks behind the gills. Neurosetae absent from segments III-VI. Neuropodial uncini start on segment VII and may have one or more series of teeth. Few (8) to many (60) abdominal segments.

Records from southern Africa

<i>Ampharete acutifrons</i> (Grube)	. . .	51Cs
as <i>Ampharete kerguelensis</i> (non McIntosh)	. . .	48Wsd
<i>Ampharete agulhasensis</i> (Day)	. . .	
as <i>Lysippe agulhasensis</i> Day	. . .	51Cs
<i>Ampharete capensis</i> (Day)	. . .	
as <i>Lysippe capensis</i> Day	. . .	51Cs
<i>Amphicteis gunneri</i> (Sars)	. . .	33Cs, 48Cs, 51Csd
<i>Glyphanostomum abyssalis</i> Day	. . .	
as <i>Neosabellides</i> cf. <i>elongatus</i>	. . .	55Ca
<i>Phyllocomus hiltoni</i> (Chamberlin)	. . .	
as <i>Schistocomus hiltoni</i> Chamberlin	. . .	45Pi
<i>Sabellides capensis</i> Day	. . .	51Cis
as <i>Sabellides</i> sp.	. . .	44Ci
<i>Sabellides</i> (<i>Pterampharete</i>) <i>luderitzi</i> (Augener)	. . .	
as <i>Pterampharete luderitzi</i> Augener	. . .	26Wis, 48Ws, 51Cs
<i>Sabellides octocirrata</i> (Sars)	. . .	51Cs
<i>Samythella affinis</i> Day	. . .	56Cd

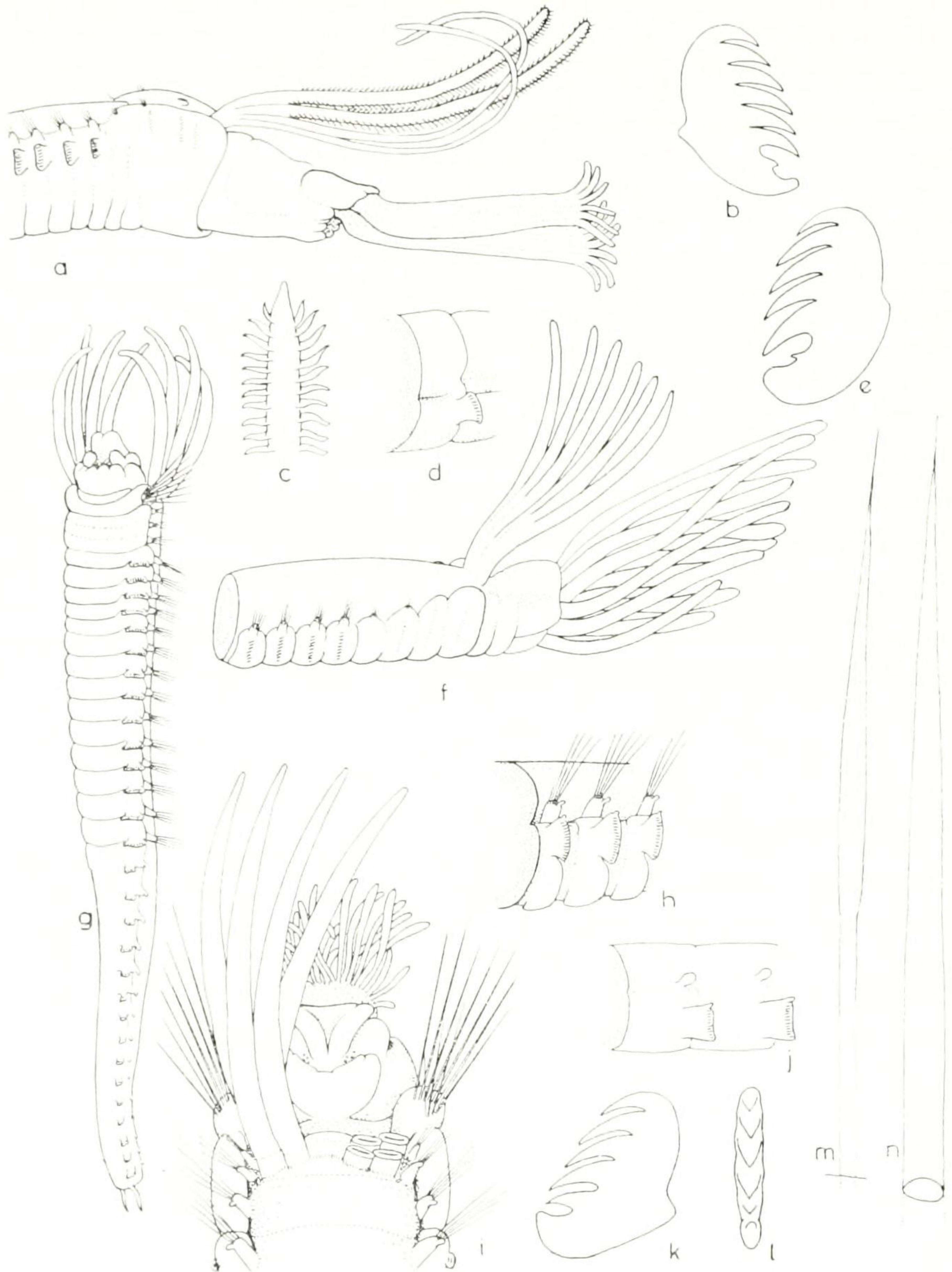


FIG. 35.2. *Isolda whydahensis*. (A) Anterior end with "tongue" extruded (gills on left side omitted). (B) Thoracic uncinus. (C) Tip of bipennate branchia. (D) Abdominal segment and parapodium. *Melinnopsides capensis*. (E) Thoracic uncinus. (F) Anterior end. *Amphicteis gunneri*. (G) Entire worm (three times life size). (H) Thoracic segments showing notopodial cirri. (I) Anterior end. (J) Abdominal segments and parapodia. (K, L) Profile and edge-on view of thoracic uncinus. (M) Winged capillary. (N) Palea.

KEY TO GENERA

- 1 Four pairs of gills 2
 - Three pairs of gills 8
 - Two pairs of gills (first row of uncini very long) *AUCHENOPLAX**
- 2 Glandular ridges on prostomium (fig. 35.2.i). (Notopodial cirri present (fig. 35.2.h)) 3
 - No glandular ridges 4
 3 Fourteen uncigerous thoracic segments *AMPHICTEIS* (p. 695)
 - Eleven uncigerous thoracic segments *AMAGE**
- 4 Fourteen uncigerous thoracic segments 5
 - Thirteen uncigerous thoracic segments *LYSIPPE**
- Twelve uncigerous thoracic segments 6
 - Eleven uncigerous thoracic segments. (Two nephridial papillae on the branchial ridge (fig. 35.3.a)) *SABELLIDES* (p. 696)
 5 Notopodial cirri present *PHYLLAMPHICTEIS**
- Notopodial cirri absent *LYSIPPIDES**
- 6 Tentacles papillose. Thoracic uncini with two vertical series of teeth (fig. 35.4.c) *AMPHARETE* (p. 699)
 - Tentacles smooth with a groove along one side. Thoracic uncini with a single vertical series of teeth 7
 7 One median papilla on the branchial ridge. Specialised notosetae in some posterior notopodia *SOSANE**
- No nephridial papillae on the branchial ridge. No specialised posterior notosetae *PHYLLOCOMUS* (p. 702)
- 8 Fourteen uncigerous thoracic segments. (Abdominal notopodia present. No glandular ridges on prostomium) *SAMYTHA**
- Thirteen uncigerous thoracic segments *MICROSAMYTHA**
- Twelve uncigerous thoracic segments 9
 - Eleven uncigerous thoracic segments *GLYPHANOSTOMUM* (p. 703)
- 9 Tentacles papillose. (No dorsal ridge on segment VI) *NEOSABELLIDES**
- Tentacles smooth. (Thoracic uncini with a single vertical series of teeth) *SAMYTHELLA* (p. 704)

AMPHICTEIS Grube, 1851

Prostomium with a pair of divergent glandular ridges. Buccal tentacles smooth with a groove along one side. Four pairs of gills. Segments III–IV without neurosetae. Segment III often with paleae, segments IV–VI with notopodial capillaries. Fourteen uncigerous thoracic segments. Notopodial cirri present. Thoracic uncini with a single vertical series of teeth. Thirteen to nineteen abdominal segments, sometimes with rudimentary notopodia as well as uncigerous pinnules.

TYPE SPECIES: *Amphicteis gunneri* Sars, 1835.

Amphicteis gunneri (Sars, 1835)
 (fig. 35.2.g–n)

Amphitrite gunneri Sars, 1835: 50, pl. 9 fig. 30.

Amphicteis gunneri: Fauvel, 1927: 231, fig. 80 a–k; Day, 1961: 527.

Body (fig. 35.2.g) up to 60 mm. long. Prostomium (fig. 35.2.i) quadrangular with prominent glandular ridges. Buccal tentacles rather short, smooth and grooved along one side; they arise from a horizontal shelf in the mouth which is occasionally

protruded. Two groups of four to five ocelli. Four pairs of smooth tapered gills arranged two in front and two behind on the branchial ridge with a median gap between right and left groups. Notosetae of segment III as large wingless paleae with smoothly tapered tips (fig. 35.2.n). Segments IV–VI with notopodial capillaries (fig. 35.2.m). Fourteen uncigerous thoracic segments starting from segment VII. Papilliform dorsal cirri on both notopodia and neuropodia (fig. 35.2.h). Thoracic uncini (fig. 35.2.k, l) with a single vertical series of four teeth above the tooth-like rostral point and basal prow. Fifteen abdominal segments with square uncigerous pinnules (fig. 35.2.j) bearing a superior papilla. Rudimentary notopodia on all segments in the form of pedunculate lobes. They originate progressively further and further above the uncigerous pinnules (fig. 35.2.g). Pygidium with a pair of long anal cirri.

TYPED LOCALITY: Dredged off Norway.

RECORDS: South-west Africa (26/15/s); Cape (from 32/17/d to 34/18/s and 34/25/s); Natal (31/29/s and 30/30/s).

DISTRIBUTION: Atlantic from Greenland (s, d, vd, a) and Norway (s, d) south to North Carolina (s, d), Morocco (s, d) and Ghana (s, d); Mediterranean; tropical Indian Ocean (d, vd); Kerguelen (s).

SABELLIDES Milne-Edwards, 1838

(including *PTERAMPHARETE* Augener, 1918)

Prostomium without glandular ridges. Buccal tentacles papillose. Four pairs of gills, arranged three in line and one behind on the branchial ridge. A pair of nephridial papillae on the branchial ridge between the two groups of gills. Segments III–VI without neurosetae. Segments V and VI with notopodial capillaries, segment IV usually fused to segment III and without notosetae, but notosetae often present on segment III. Eleven uncigerous thoracic segments. No specialised posterior notosetae. Notopodial cirri absent. Thoracic uncini with one or two series of teeth. Between 11 and 18 abdominal segments with uncigerous pinnules but without rudimentary notopodia.

TYPE SPECIES: ? *Sabella octocirrata* Sars, 1835.

KEY TO SPECIES

- 1 Gills papillose (fig. 35.3.a and g). Thoracic uncini with two series of five teeth (subgenus *Pterampharete*) *S. (P.) luderitzi*
- Gills smooth. Thoracic uncini with a single vertical series of teeth (fig. 35.h and k) 2
- 2 Posterior abdominal neuropodia with a long superior cirrus (fig. 35.3.i). Nephridial papillae on branchial ridge minute *S. octocirrata*
- Posterior abdominal neuropodia with only a minute superior papilla. Nephridial papillae on branchial ridge large (fig. 35.3.l) *S. capensis*

Sabellides (Pterampharete) luderitzi (Augener, 1918)
(fig. 35.3.a-g)

Pterampharete luderitzi Augener, 1918: 505, pl. 7 figs. 222-224, text-fig. 84; Day, 1961: 527.

Body about 20 mm. long. Prostomium (fig. 35.3.a) spade-shaped. One pair of eyes. Numerous tentacles beset with capitate papillae (fig. 35.3.e). Four pairs of papillose gills (or three inner pairs papillose and the outer pair smooth) arranged in a line on the branchial ridge with a pair of small nephridial papillae between them. Notosetae of segment III as eight to nine well developed paleae with finely tapered tips. Segment IV achaetous and fused to segment III. Segments V and VI with notopodial capillaries. Eleven uncigerous thoracic segments (fig. 35.3.c). Thoracic uncini (fig. 35.3.f, g) with two vertical series of five teeth each above the small rostral point and recurved basal prow. Abdomen with 11 segments bearing uncini on pinnules which become triangular after the first two (fig. 35.3.d). A minute superior papilla above the uncini. Pygidium with a pair of long anal cirri.

TYPE LOCALITY: Luderitz, South West Africa.

RECORDS: South West Africa (23/14/s, d to 28/16 /s); Cape (from 32/17/d to 34/18/s and 34/23/s).

DISTRIBUTION: Endemic.

Sabellides octocirrata (Sars, 1835)
(fig. 35.3.h-k)

?*Sabella octocirrata* Sars, 1835: 51.

Sabellides octocirrata: Hesse, 1917: 101; Fauvel, 1927: 232, fig. 81 a-g.

Length up to 10 mm. Prostomium (fig. 35.3.h) a triangular hood over the mouth pinched in at the sides. One pair of eyes. Buccal tentacles pennate. Four pairs of long smooth gills arranged obliquely on the branchial ridge with a minute pair of nephridial papillae in the narrow median gap between them. Segment III with four to five notopodial capillaries which are much smaller than those which follow. Segment IV achaetous and fused to segment III. Segments V and VI with notopodial capillaries. Eleven uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.3.j, k) with a single series of three to four teeth above the rostral point and recurved basal prow. Abdomen with 14-17 segments which bear long neuropodial cirri (fig. 35.3.i) above the rows of uncini after the first two segments. Abdominal uncini with eight teeth arranged in two to three series. One pair of anal cirri.

TYPE LOCALITY: Norway.

RECORDS: South West Africa (26/15/s); Cape (from 32/18/s to 34/18/s and 32/28/s).

DISTRIBUTION: North Atlantic from Greenland (s) and Sweden (d) south to the Canary Islands (s); Mediterranean; ? Alaska.

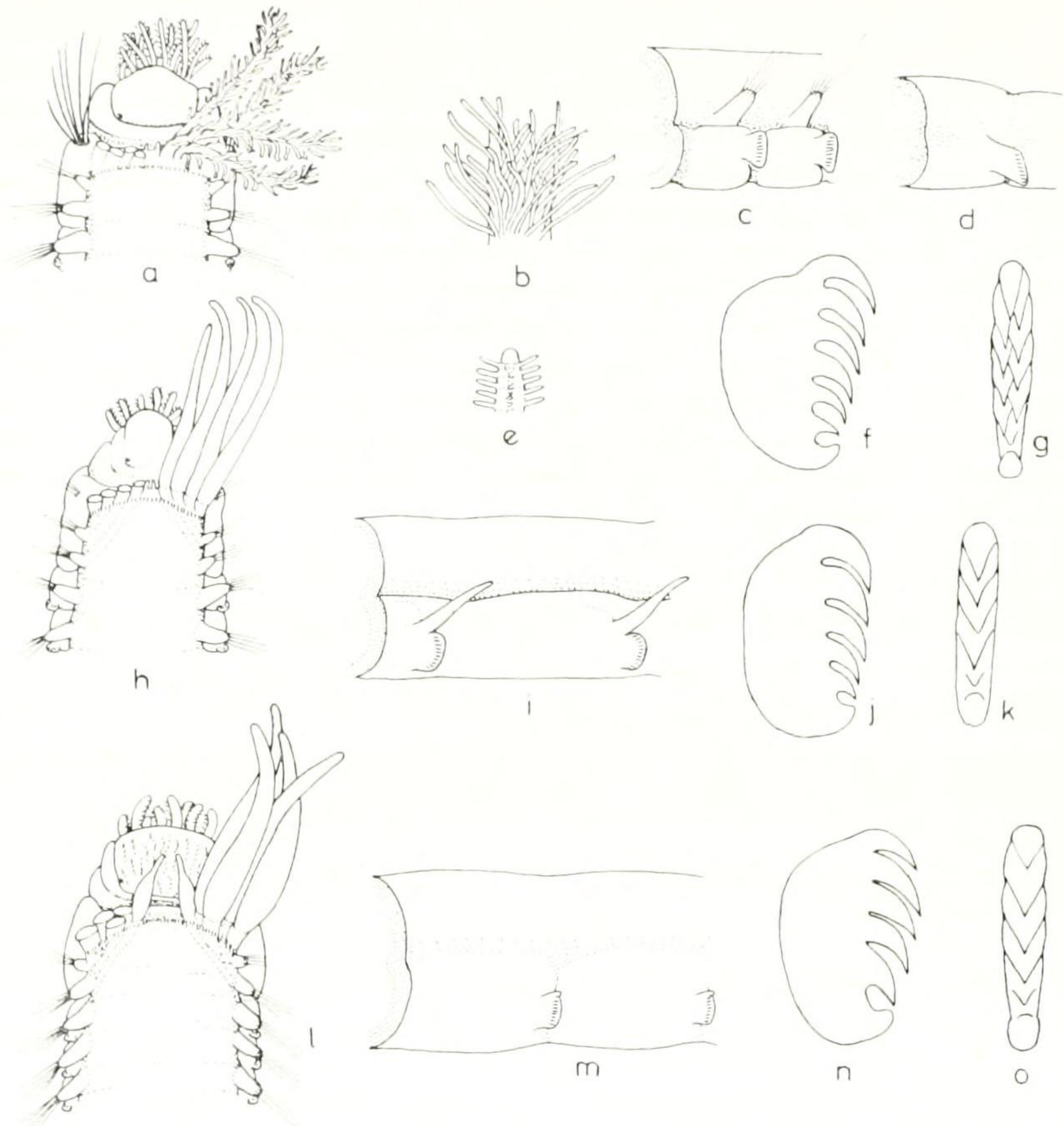


FIG. 35.3. *Sabellides (Pterampharete) luderitzi*. (A) Anterior end. (B) Part of papillose gill. (C) Thoracic parapodia. (D) Fifth abdominal parapodium. (E) Tip of buccal tentacle. (F, G) Profile and edge-on view of thoracic uncinus. *Sabellides octocirrata*. (H) Anterior end. (I) Fourth and fifth abdominal parapodia. (J, K) Profile and edge-on view of thoracic uncinus. *Sabellides capensis*. (L) Anterior end. (M) Fourth and fifth abdominal parapodia. (N, O) Profile and edge-on view of thoracic uncinus.

***Sabellides capensis* Day, 1961**
(fig. 35.3.l-o)

Sabellides capensis Day, 1961: 528, fig. 12 a-h.

Length up to 12 mm. Prostomium (fig. 35.3.l) a speckled, flattened hood over the mouth. One pair of eyes. Buccal tentacles papillose. Four pairs of smooth gills arranged three in front and one behind on the branchial ridge with a wide median gap between them in which there is a pair of very long nephridial papillae. Segment

III without setae. Segment IV achaetous and fused to segment III. Segment V and VI with small bundles of notopodial capillaries. Eleven uncigerous thoracic segments starting from segment VII. Glandular ventral pads continue to the ninth uncigerous segment. Thoracic uncini (fig. 35.3.n, o) with a single vertical series of three to four teeth above the shorter rostral point and recurved basal prow. Eleven to fourteen abdominal segments with square uncigerous pinnules each bearing a minute papilla above the uncini. One pair of anal cirri.

TYPE LOCALITY: Dredged off Cape Town, South Africa.

RECORDS: South West Africa (26/15/s); Cape (from 29/16/i to 34/17/d and 34/25/s).

DISTRIBUTION: Endemic.

AMPHARETE Malmgren, 1866

Prostomium without glandular ridges. Buccal tentacles papillose. Four pairs of gills. No nephridial papillae on the branchial ridge. Segments III–VI without neurosetae. Notosetae of segment III usually enlarged to form paleae, notosetae of segment IV usually absent, notosetae of segments V and VI always present. Twelve uncigerous thoracic segments. Notopodial cirri absent. Thoracic uncini usually with two series of teeth. About 12–15 abdominal segments which have uncigerous pinnules but usually lack rudimentary notopodia.

TYPE SPECIES: *Amphicteis acutifrons* Grube, 1860.

KEY TO SPECIES

- 1 Paleae markedly larger than the capillaries of uncigerous thoracic segments (fig. 35.4.a). 2
- Paleae not larger than the capillaries of uncigerous thoracic segments 3
- 2 Abdominal segments with long superior cirri on the neuropodia (fig. 35.4.d). Paleae have smoothly tapered tips (fig. 35.4.e) *A. acutifrons*
- Abdominal segments without superior cirri on the neuropodia. Paleae have abruptly tapered tips (fig. 35.4.l) *A. kerguelensis*
- 3 Conspicuous notopodial lobes above the first four uncigerous pinnules of the abdomen (fig. 35.4.p, q). Gills extend well beyond the prostomium *A. agulhasensis*
- No notopodial lobes above the uncigerous pinnules (fig. 35.4.j) on the abdomen. Gills do not extend beyond the prostomium *A. capensis*

Ampharete acutifrons (Grube, 1860)
(fig. 35.4.a–f)

Amphicteis acutifrons Grube, 1860: 109.
Ampharete acutifrons: Hesse, 1917: 96.
Ampharete grubei Fauvel, 1927: 227, fig. 79 a–p.

Body up to 80 mm. long. Prostomium (fig. 35.4.a) a triangular hood over the mouth, and pinched in at the sides. One pair of eyes. Tentacles clearly pennate. Gills smooth and extend well beyond the prostomium. They are arranged two in front and two behind on the fused third and fourth segments. Segment III with

10–15 large paleae which taper evenly to fine tips (fig. 35.4.e). Segment IV without setae but may have an achaetous notopodium. Segments V and VI with small capillaries. Twelve uncigerous thoracic segments starting from segment VII. Thoracic notosetae (fig. 35.4.f) are winged capillaries. Thoracic uncini (fig. 35.4.b, c) with two vertical series of five teeth above the poorly developed rostral point and basal prow. Twelve abdominal segments bearing dorsal cirri on the uncigerous pinnules (fig. 35.4.d). Rudimentary notopodia absent. Pygidium with several anal cirri, including one long pair.

TYPE LOCALITY: Greenland.

RECORDS: Cape (34/17/d and 34/25/s).

DISTRIBUTION: Arctic; North Atlantic from Greenland (s, d) and Sweden (d) south to North Carolina (s) and Morocco (s, d); Mediterranean; North Pacific from the Behring Sea to N.W. Japan and southern California.

Ampharete kerguelensis McIntosh, 1885
(fig. 35.4.k–l)

Ampharete kerguelensis McIntosh, 1885: 426, pl. 47 fig. 10, pl. 26A figs. 22–24; Hesse, 1917: 100.

Body up to 18 mm. long. Prostomium a triangular hood over the mouth. One pair of eyes. Tentacles pennate. Gills long and smooth, extending well beyond the prostomium. Segment III with seven to eight large paleae which end in blunt tips with minute filiform processes (fig. 35.4.l). Segment IV with an achaetous notopodium. Segments V and VI with normal capillaries. Twelve uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.4.k) with two vertical series of six teeth above the short rostral point and recurved basal prow. Twelve abdominal segments. No dorsal cirri on the neuropodia and no rudimentary notopodia. Pygidium encircled by numerous small papillae.

TYPE LOCALITY: Kerguelen.

RECORDS: ?South West Africa (23/14/s, d).

DISTRIBUTION: Antarctica; South Georgia; Kerguelen (d); New Zealand; ? tropical western Africa.

Ampharete agulhasensis (Day, 1961)
(fig. 35.4.m–r)

Lysippe agulhasensis Day, 1961: 529, fig. 12 e–k.

Body slender, up to 15 mm. long. Prostomium (fig. 35.4.m) curved in front and pinched in at the sides. One pair of eyes. Buccal tentacles long with two rows of capitate papillae. Four pairs of gills with a wide median gap between them. Gills long, extending well beyond the prostomium. "Paleae" on segment III of the same size as the normal capillaries of later thoracic segments. Segment IV achaetous and fused to segment III. Segment V with a small bundle of capillaries and segment VI

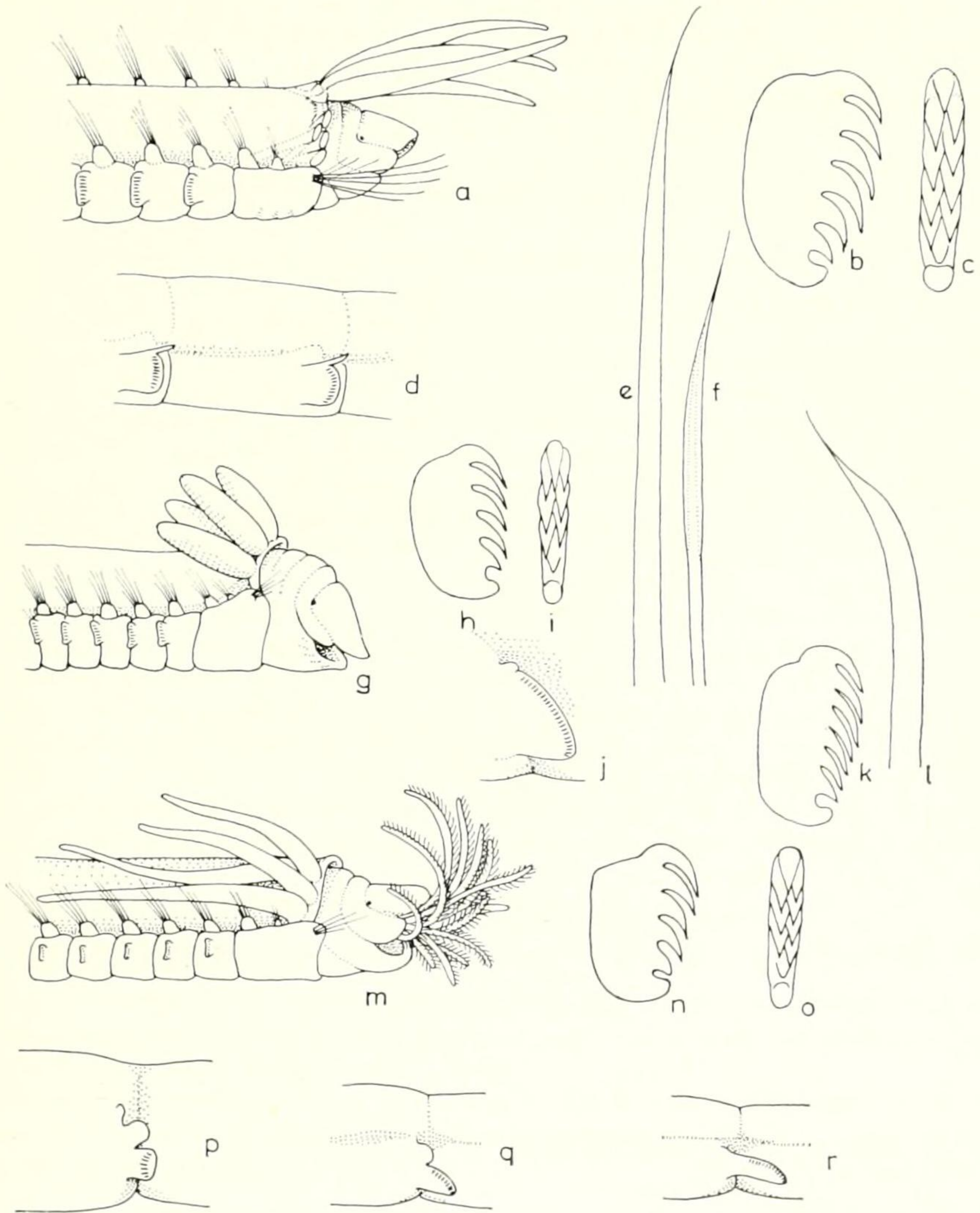


FIG. 35.4. *Ampharete acutifrons*. (A) Anterior end. (B, C) Profile and edge-on view of thoracic uncinus. (D) Fourth and fifth abdominal parapodia. (E) Palea. (F) Winged capillary. *Ampharete capensis*. (G) Anterior end. (H, I) Profile and edge-on view of thoracic uncinus. (J) Fifth abdominal parapodium. *Ampharete kerguelensis* (after McIntosh). (K) Profile of thoracic uncinus. (L) Tip of palea. *Ampharete agulhasensis*. (M) Anterior end. (N, O) Profile and edge-on view of thoracic uncinus. (P, Q, R) First, fourth and eighth abdominal parapodia.

with normal ones. Twelve uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.4.n, o) with two vertical series of four teeth above the small rostral point and recurved basal prow. Twelve abdominal segments; the first four (fig. 35.4.p, q) having large notopodial lobes above the square uncigerous pinnules and the last eight (fig. 35.4.r) without notopodia but with paddle-shaped uncigerous pinnules. Pygidium with a pair of long anal cirri and 10 low papillae around the anus.

TYPE LOCALITY: Agulhas Bank, South Africa.

RECORDS: Cape (34/22/s, d and ? 34/23/s).

DISTRIBUTION: Endemic.

Ampharete capensis (Day, 1961)
(fig. 35.4.g-j)

Lysippe capensis Day, 1961: 530, fig. 12 h-o.

Body tapered, up to 20 mm. long. Prostomium (fig. 35.4.g) pointed and arched down over the mouth. One pair of eyes. Buccal tentacles beset with long papillae. Four pairs of gills on the branchial ridge with only a narrow gap between them. Gills short and do not extend beyond the tip of the prostomium. "Paleae" on segment III rather smaller than the normal capillaries of later segments. Segment IV achaetous and fused to segment III. Segment V with weak capillaries and segment VI with normal ones. Twelve uncigerous thoracic segments starting from segment VII. Thoracic uncini (fig. 35.4.h, i) with two vertical series of four teeth above the small rostral point and recurved basal prow. Twelve abdominal segments without any rudimentary notopodia. Uncigerous pinnules (fig. 35.4.j) roughly triangular throughout with only a minute dorsal papilla above the uncini. Pygidium with a pair of anal cirri.

TYPE LOCALITY: Saldanha Bay, South Africa.

RECORDS: South West Africa (26/14/d); Cape (from 32/17/d to 34/18/s).

DISTRIBUTION: Endemic.

PHYLLOCOMUS Grube, 1878
(including *SCHISTOCOMUS* Chamberlin)

Prostomium without glandular ridges. Buccal tentacles smooth with a groove along one side. Four pairs of gills. Segments III-VI without neurosetae. Notopodial capillaries present on segments IV, V and VI. Twelve uncigerous thoracic segments without specialised notosetae. Notopodial cirri present or absent. Thoracic uncini with a single series of teeth. Numerous (over 30) abdominal segments.

TYPE SPECIES: *Phyllocomus crocea* Grube, 1878a.

Phyllocomus hiltoni (Chamberlin, 1919)
(fig. 35.5. a-h)

Schistocomus hiltoni Chamberlin, 1919a: 17; Fauvel, 1932: 219, pl. 8 figs. 15-19; Fauvel, 1953: 411, fig. 216 a-e; Day, 1957: 112.

Body (fig. 35.5.a) up to 50 mm. long, speckled with brown dorsally. Prostomium (fig. 35.5.b) a flattened lobe over the mouth with a rounded anterior margin. No glandular ridges. Eyes absent. Numerous buccal tentacles which are smooth with a groove along one side; they arise from a hood-shaped membrane which is retractile into a pocket-shaped cavity below the prostomium and above the true mouth. Branchiferous ridge well developed. Four pairs of gills of which the first and outermost is smooth, the second and medial is unilamellate (fig. 35.5.c) and the third and fourth lateral pairs are bilamellate. The first and second are on the branchial ridge and the third and fourth arise above segments V and VI. Segment III without setae of any sort. Segments IV-VI with notopodial capillaries but no neurosetae. Twelve uncigerous thoracic segments starting from segment VII. Notosetae (fig. 35.5.h) are all normal winged capillaries. Uncigerous pinnules on the thorax (fig. 35.5.d) with a superior papilla. Thoracic uncini (fig. 35.5.e, f) with a single vertical series of five to six teeth above the small rostral point and recurved basal prow. Abdomen with about 50 segments, each with a rudimentary notopodial lobe and an uncigerous pinnule with a superior cirrus; in addition, the anterior abdominal segments have an intermediate triangular projection between the minute rudimentary notopodium and the uncigerous pinnule (fig. 35.5.g). Pygidium with a circle of short cirri around the anus.

TYPE LOCALITY: California.

RECORDS: Natal (30/30/s); Mocambique (23/35/e).

DISTRIBUTION: India (s); Southern California.

GLYPHANOSTOMUM Levinsen, 1883

Prostomium without glandular ridges. Buccal tentacles (?) smooth. Three pairs of gills. Segments III-VI without neurosetae. Segment III sometimes with paleae and segments IV-VI always with notopodial capillaries. Eleven uncigerous thoracic segments. Notopodial cirri absent. Thoracic uncini with two or more series of teeth. Twelve to twenty-five abdominal segments without rudimentary notopodia but with uncigerous pinnules.

TYPE SPECIES: *Samytha pallescens* Theel, 1878.

Glyphanostomum abyssale sp. nov.
(fig. 35.5.i-m)

Neosabellides cf. *elongatus*: Day, 1963: 367.

Body slender, up to 30 mm. long and encased in a narrow, closely ringed mud tube (fig. 35.5.m). Prostomium (fig. 35.5.i) as a flattened hood over the mouth. One pair of eyes. Buccal tentacles weakly papillose. Two groups of three gills each, in a

transverse row across segment III with a median gap between them. Individual gills long and smooth extending well beyond the tip of the prostomium. Segment III without setae. Segment IV with a small bundle of capillaries and larger bundles on V and VI. Eleven uncigerous thoracic segments starting on segment VII. The first few segments are short but later ones are three times longer than broad. Fourteen ventral pads. Thoracic uncini (fig. 35.5.k, l) with two vertical series of four teeth above the small rostral point and recurved basal prow. Thirty-two abdominal segments, each with an oval uncigerous pinnule bearing a minute superior papilla above the row of uncini (fig. 35.5.j). No rudimentary notopodia. Pygidium with six to eight tapered anal cirri and a larger pair of ventral lobes.

TYPE LOCALITY: 2,269 metres west of Cape Town.

RECORDS: Cape (34/16/abyssal).

DISTRIBUTION: No other record.

***SAMYTHELLA* Verrill, 1873**

Prostomium without glandular ridges. Buccal tentacles smooth and not borne on an elongate tentacular lobe. Three pairs of gills. Segments III–VI without neurosetae. Notopodial capillaries present on segments IV–VI and sometimes on III as well. Twelve uncigerous thoracic segments. Notopodial cirri may be present on the last few thoracic segments. Thoracic uncini with one or two series of teeth. Up to 36 abdominal segments.

TYPE SPECIES: *Samythella elongata* Verrill, 1873.

***Samythella affinis* Day, 1963**

(fig. 35.5.n–r)

Samythella affinis Day, 1963a: 435, fig. 11 b–e.

Length up to 10 mm. Prostomium (fig. 35.5.p) a flattened hood over the mouth. No eyes nor glandular ridges. Buccal tentacles smooth. Three pairs of smooth gills in a continuous transverse row across segment III without a median gap between them. Individual gills tapered and project far in front of the prostomium. Segment III with paleae hardly larger than the normal capillaries of uncigerous segments. Segments IV and V with small capillaries and segment VI with normal ones. Twelve uncigerous thoracic segments starting from segment VII. All notosetae are normal winged capillaries (fig. 35.5.r) and there are no specialised posterior notosetae. Thirteen glandular ventral pads. Thoracic uncini (fig. 35.5.n, o) with a single vertical series of five teeth above the rostral point and recurved basal prow. Abdomen of 11 segments of which the first few bear small square uncigerous tori and later ones have longer pinnules which are expanded distally (fig. 35.5.q). No rudimentary notopodia nor neuropodial cirri.

TYPE LOCALITY: Off Port Elizabeth, South Africa.

RECORDS: Cape (34/23/d).

DISTRIBUTION: A single record.

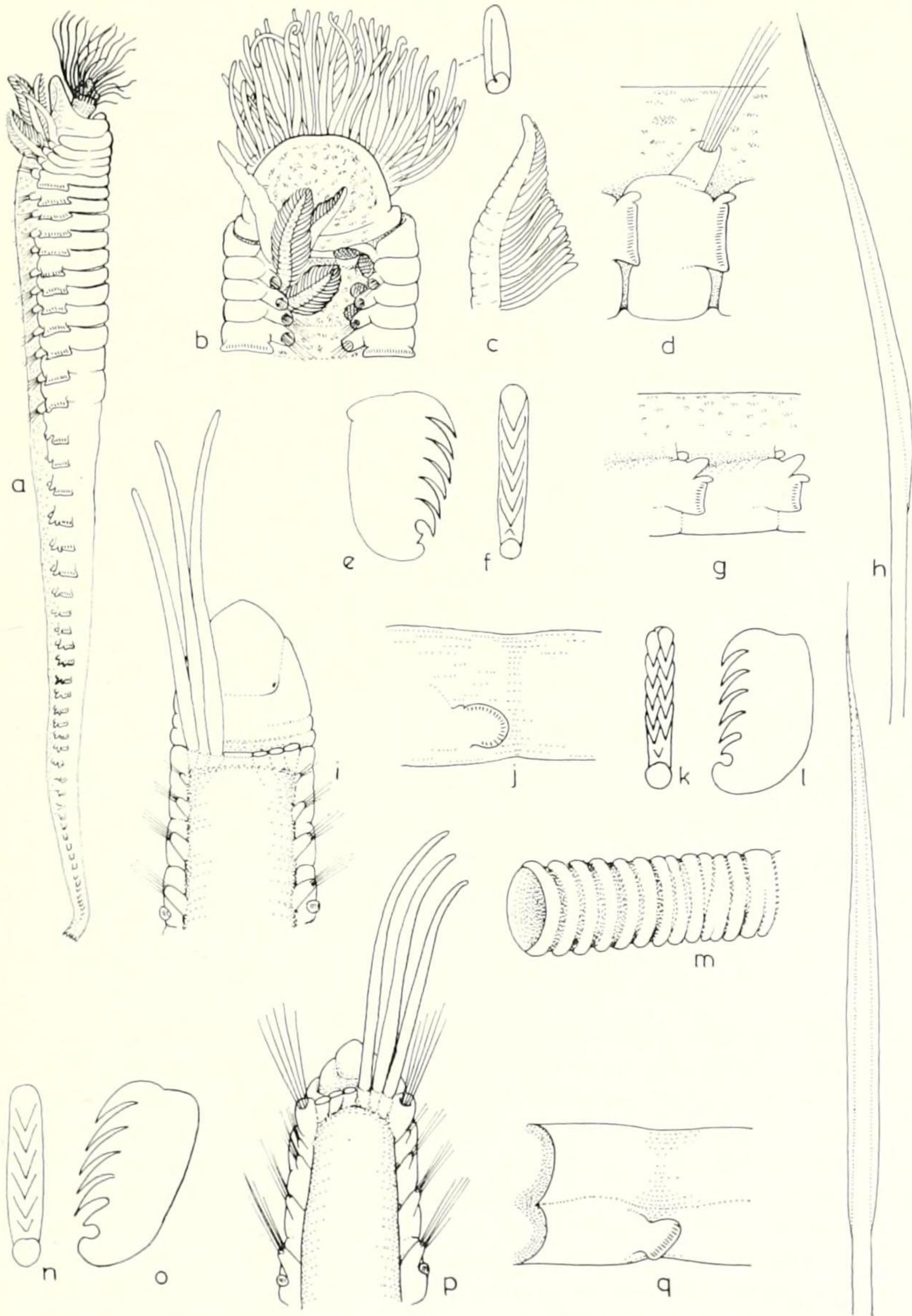


FIG. 35.5. *Phyllocomus hiltoni*. (A) Entire worm (three times life size). (B) Head with details of tentacles. (C) Lamellate gill. (D) Thoracic parapodium. (E, F) Profile and edge-on view of uncinus. (G) Parapodium from middle of abdomen. (H) Winged capillary seta. *Glyphanostomum abyssalis*. (I) Anterior end. (J) Abdominal parapodium. (K, L) Edge-on and profile of uncinus. (M) Part of mud-tube. *Samythella affinis*. (N, O) Edge-on views and profile of thoracic uncinus. (P) Anterior end. (Q) Abdominal parapodium. (R) Winged capillary seta.

Family **TEREBELLIDAE** Grube, 1851

Tubicolous worms with soft tapered bodies divided into two regions and encased in mucous tubes encrusted with sand or mud. Head with numerous grooved food-gathering tentacles which are not papillose nor retractile into the mouth. Thorax with biramous segments and often gills and lateral lobes on segments 2-4 and glandular pads ventrally. Notosetae are winged capillaries. Neurosetae either as long-shafted hooks or uncini which may be avicular with arcs of denticles above the main fang or pectinate with a single vertical series of teeth. Abdomen with numerous segments which lack notopodia and notosetae but have neuropodia and neuropodial uncini. Pygidium without anal cirri.

BIOLOGICAL NOTES

Terebellids are highly adapted deposit feeders. They all have grooved buccal tentacles and many of them can extend these out over the substratum for a distance equal to the length of the body. They usually live in quiet areas such as lagoons, rock pools or crevices where the organic particles settle and these are picked up by the sticky tentacles and conveyed along the groove either by ciliary action if the particle is small, or by muscular contraction of the whole tentacle if the particle is large. Details have been worked out by Dr. R. Phillips Dales and he has shown that the food-laden tentacle is wiped on the upper lip which acts as a sorting device.

Apart from a few exceptions to be noted later, the terebellids are all tubicolous and some of the larvae build tubes of diatom frustules while floating in the plankton. The adult tube is usually attached to the side of a rock and extends back into a crevice or down below the level of the sand. The building materials are not carefully selected and the result is an untidy and rather fragile tube composed of sand, mud, fragments of shell or sponge spicules. At deep levels foraminiferan shells are commonly used. Only a few genera such as *Lanice* and *Loimia* commonly build tubes away from rocks. *Lanice* often builds a stout tube which projects well above the surface of the mud and decorates the flattened end with projecting fingers of sand grains. *Loimia* occasionally builds its tube on open sandy beaches and the whole tube is then shaped like a cork-screw so that it breaks before it pulls out of the sand.

Polycirrus and a few other genera such as *Amaeana* do not make tubes at all and creep about naked. *Polycirrus* lives among branching organisms such as algae, hydroids and bryozoa and pulls its body around with its tentacles. It is noteworthy that the Polycirrinae are the only group which lack gills. The one exception is the American genus *Enoplobranchus* which lives on black mud. Its branchiae are quite different from those of other terebellids and are vascular outgrowths of the notopodia. Another unusual terebellid is *Artacama* which burrows through the silt by means of a papillose proboscis below the mouth.

THE MAIN DIAGNOSTIC CHARACTERS

The family Terebellidae, originally defined by Grube, was revised by Malmgren (1865) and his system of classification has been accepted with minor modifications by all later workers. Useful discussions will be found in Saint Joseph 1894, Hesse

1917, Chamberlin 1919 and Fauvel 1927. The most important revision is that of Hessle who describes the anatomy and discusses the relation of the Terebellidae to the Trichobranchidae [*sic*], Amphictenidae (= Pectinariidae) and Ampharetidae. Recent work on feeding habits and the structure of the mouth and buccal tentacles will be found in Dales 1955.

The most useful taxonomic characters include the structure of the head, the number and the type of branching of the gills, the development of lateral lobes on the first few segments, the distribution and nature of the setae, the development of the glandular ventral pads and the number of nephridia.

The structure of the head. Since the prostomium is not distinct in adult Terebellids there has been considerable doubt as to the segmental homologies of anterior structures. Hessle (1917) draws comparisons between the Terebellidae and Ampharetidae. He notes that the buccal tentacles were originally arranged in two arcs on either side of the mouth opening as shown by their innervation, but states that in modern forms they are arranged in a continuous semicircle above the mouth. Above the tentacles again there is, in the Amphictenidae and the Ampharetidae, a flattened projecting lobe which Hessle terms the "Tentakelmembran" and between the tentacles and the mouth there is a curved "Oberlippe". Below the mouth Hessle states that: "Ein frei vorstehender Hautsaum des Buccalsegments dient auf der Ventralseite als Unterlippe". Actually, as Dales (1955a) has shown, the Terebellids have not one lower lip but four, all derived from the buccal segment or the projecting surface of the stomadaeum. Dales also says, however, that there is one upper lip and that the tentacles arise from the prostomium.

The homologies of the Tentakelmembran in the Ampharetidae have been discussed by me (Day, 1964), and it was concluded that this flattened lobe which contains the brain and cephalic eyes is the prostomium. The buccal tentacles of the Ampharetidae arise from the roof of the mouth and may be retracted into it. In some species (e.g. *Amphicteis gunneri* (fig. 35.2.i)) it may be seen that they arise from the margin of a horizontal septum which divides the mouth into a tentacular pocket above and a food passage below. In *Isolda whydahensis* (fig. 35.2.a) the same septum is greatly elongated and clearly issues from the mouth. It bears short grooved tentacles at its end so that these organs are not prostomial in origin but are derived from the stomadoeum.

The buccal tentacles of the Terebellidae are obviously homologous with those of the Ampharetidae but neither the tentacles nor the upper lip which bears them is retractile into the mouth. In *Trichobranthus glacialis* (fig. 36.1.a) which belongs to the primitive subfamily Trichobranchinae linking the Ampharetidae to the Terebellidae, the prostomial fold which bears the eyes is separated from the long, frilly upper lip which bears the tentacles. In the subfamily Polycirrinae the upper lip is similar to that of *Trichobranthus* but in the more advanced subfamilies *Thelepininae* and *Amphitritinae* the tentacular lobe is short and fused to the prostomium. The combined structure is like a stout collar which bears tentacles on its antero-ventral surface and eye-spots on its postero-dorsal surface. Below this collar-like *tentacular lobe* is a second upper lip in the shape of a glandular hood overhanging the mouth opening. We may summarise by saying that in distinction to the Ampharetids where the roof of the

buccal cavity and tentacles may be everted at will, the terebellids have the lining of the buccal cavity permanently everted to form two upper lips and four lower ones.

The branchiae. Typically there are three pairs of gills on segments 2, 3 and 4. In different genera or even different species of the same genus these may be reduced to two pairs or even one. In the subfamily Polycirrinae there are no gills at all though this is not surprising since they are not tubicolous. It may be added that as gills are often lost and readily regenerated, the gills are often very unequal in size.

The gills may branch dichotomously or the gill filaments may be arranged in whorls to form a terminal tuft or "pom-pom" on a single main stem. This is a useful taxonomic character in the genus *Pista* but the relative lengths of the filaments is not, since the whole gill is contractile. In the subfamily Thelepininae the gills are not branched but arise as simple filaments directly from the body wall. Somewhat the same condition occurs in species of *Amphitrite* where the branchial trunk is extremely short and the filaments are elongated.

Lateral lobes. The buccal segment may develop a prominent shelf-like lower lip, a conical proboscis (e.g. *Artacama*), or wing-like *lateral lobes*. Similar lateral lobes are developed from segments 2, 3 and 4 by several genera and are important taxonomic characters. In species of *Pista* and some other genera, the large lateral lobes on the buccal segment may meet and fuse ventrally and then project forward as a sort of basal sheath to the tentacles. All lateral lobes are extremely glandular and function mainly in the construction of the tube.

The distribution and nature of the setae. As shown by Wilson (1928) the setae first appear on segment 2 during development but these and others may be lost later so that in the adult the first setigerous segment may be the second, third or fourth and in *Hauchiella* there are no setae at all. Usually the neurosetae appear on a later segment than the notosetae and the distribution of both types of setae is of generic importance. Typically there are about 17 bundles of notosetae and their presence distinguishes the anterior or *thoracic region* from the posterior or *abdominal region*, although in some genera, e.g. *Thelepus* and *Terebella* the notosetae extend onto the abdominal segments. It is of interest to note that many genera of the family Ampharetidae also have 17 bundles of notosetae. The identification of the first setigerous segment is easy in genera that bear gills for the first gill is always on segment 2, but where gills are absent as in *Polycirrus* and its allies the numbering of this segment is more difficult. In this connection it may be remembered that the tentacles arise from the stomadaeum and not from the prostomium. Some early descriptions are confusing for this reason.

With few exceptions the notosetae are *winged capillaries* consisting of a basal *shaft* and a terminal *blade* with lateral flanges or *wings* on either side of a central *axis*. Occasionally the wings are incised or *serrated* as in certain species of *Polycirrus* but usually the wings are smooth. The tip of the axis may be smooth and in this case the whole seta is referred to as a "*smooth tipped capillary*" or the distal part of the axis may develop a saw-edged median ridge in which case the seta is said to have a *denticulate tip*. In *Terebella* the wings of the posterior notosetae are reduced or even absent and the denticulate tip is enlarged until the entire blade is denticulate.

The neurosetae are usually arranged in a single vertical row on the *uncigerous ridges* or *tori* of the subfamilies Polycirrinae and Thelepinae. In the Amphitritinae however the posterior thoracic segments have their neurosetae (*uncini*) arranged in *alternating rows* with one uncinus facing one way and the next the opposite way or in two rows either face to face or back to back. On abdominal segments the uncigerous ridges become more prominent and often project as *uncigerous pinnules*. Only very marked differences in shape are of systematic importance.

The most primitive form of neuroseta is the *acicular hook* found in the thorax of the Trichobranchinae. These have long shafts and a curved rostrum surmounted by a crest of obscure denticles. In most terebellids, however, the neurosetae are *uncini*, or flattened S-shaped tooth-plates with a main fang or rostrum arising from a broad flattened base and surmounted by a series of small teeth or denticles. These denticles may be arranged in a single vertical series (*pectinate uncini*) or in a series of transverse arcs (*avicular uncini*). In the latter case the number and arrangement of the denticles may be expressed by a *dental formula* in which the number of teeth in each arc is stated e.g. MF : 3-5 : 7-12 where the first arc above the main fang has three to five teeth and the second seven to twelve. In the genus *Thelepus* the identification of species depends on the shape of the basal part of the uncinus. This projects forward as a *basal prow* upon which the *attachment button* is mounted in different ways. To see the full details, the uncinus should be examined in edge-on-view and in profile after treating with 5% KOH.

Glandular ventral pads. Scattered glandular cells may be found all over the body but specialised concentrations of giant glandular cells are limited to certain areas. These are known as *ventral pads* or cushions and occur on the ventrum of most of the thoracic segments. The outline of the pad changes as the worm extends and contracts but the number is reasonably constant. They are found in the Amphitritinae and Thelepinae but are absent in the Trichobranchinae and in greatly reduced numbers in the Polycirrinae. In the latter family the pads are small and limited to a midventral groove of the first few segments but the lateral body wall of the first 10-15 segments forms glandular swellings below the notopodia and this makes it difficult to find the rows of uncini.

Nephridia. Hesse (1917) described these structures in detail and uses them in his system of classification. This has not found favour with later workers because it demands dissection and the *nephridial papillae* on which the nephridiopores open vary in size according to the sexual state of the animal. None the less in the difficult genus *Polycirrus* the number of nephridia is an important character. The most satisfactory method is to remove the dorsal body wall from the anterior thorax, take out the gut and then count the nephridia which show as opaque white sacs.

GENERIC GROUPINGS

As mentioned earlier, most workers have adopted Malmgren's system of classification with minor modification. Saint Joseph (1894) stressed the importance of the uncini and Hesse (1917) the importance of the nephridia. The importance of

these structures is not disputed but they do not provide a practical means of identifying large collections. In Fauvel (1927) a wide variety of external characters are used and the nephridia only become important in distinguishing the species of *Polycirrus*.

In the present work the subfamilies Trichobranchinae, Polycirrinae, Thelepinae and Terebellinae are recognised. I agree with Fauvel in reducing Hessle's Trichobranchidae to the status of a subfamily and I agree with Hessle that *Artacama* with its very striking proboscis is no more than a specialised member of the Terebellinae *olim* Amphitritinae. The main difference from earlier works is that all genera which lack gills are included in the sub-family Polycirrinae. Fauvel following Hessle has grouped the abranchiate genera *Leaena*, *Lanassa*, *Laphania*, *Phisidia*, *Proclea* and *Spinospaera* in the Terebellinae and thus separates them from the abranchiate genera *Polycirrus*, *Amaeana*, *Lysilla* and *Hauchiella*. Detailed discussions concerning all these genera will be found in Hessle but I do not find his arguments sufficiently convincing. The inclusion of all abranchiate genera in one subfamily certainly makes the task of identification much simpler and I have broadened Malmgren's definition of the Polycirrinae to allow for this.

KEY TO SUBFAMILIES

- 1 Thoracic neurosetae as long-shafted hooks (fig. 36.1.d). Branchiae always present
TRICHOBRANCHINAE (p. 710)
- Thoracic neurosetae as uncini (fig. 36.5.c, d). Branchiae sometimes absent 2
- 2 Branchiae absent. Tentacular lobe often large and frilled POLYCI RRINAE (p. 713)
- Branchiae present as simple filaments. Tentacular lobe usually small and collar-like
THELEPINAE (p. 722)
- Branchiae present and usually blanché. Tentacular lobe small and collar-like
TEREBELLINAE (p. 731)

Subfamily **TRICHOBRANCHINAE** Malmgren, 1866
 (Trichobranchidae, Hessle 1917, includes *CANEPHORIDEA* and
TRICHOLBRANCHIDEA Malmgren)

Tentacular lobe expanded with the frilly margin on the dorsal surface of which is a ridge bearing grooved tentacles. Branchiae either filamentous or united into a single branchial trunk with four lamellate lobes. Glandular ventral pads not developed. Thoracic neurosetae as long acicular hooks with dentate crests; abdominal neurosetae as avicular uncini. Large nephridia present in front of the diaphragm.

Records from southern Africa

<i>Terebellides stroemi</i> Sars	.	.	.	.	32Ps, 34Cd, 48Cd, 51Csd, 55Ca, – Ms
<i>Trichobranhus glacialis</i> Malmgren	.	.	.	.	44Ci, 48Cs, 51Csd

KEY TO GENERA

- 1 A single branchial trunk distally divided into four lamellate lobes (fig. 36.1.g)
- TEREBELLIDES*
- Two to three pairs of simple filamentous gills (fig. 36.1.a) *TRICHOBRANCHUS*
- Four pairs of simple gills *OCTOBRANCHUS**

TRICHOBRANCHUS Malmgren, 1866

Tentacular lobe large and frilly with numerous grooved tentacles arising from the dorsal surface. First segment with a pair of lateral lobes. Two to three pairs of gills on segments 2–4, each a cylindrical tapered filament. Notosetae as smooth-tipped capillaries on about 15 segments starting from the sixth. Neurosetae start on setiger 1, the thoracic ones being long acicular hooks with toothed crests and the abdominal ones being avicular uncini. Five pairs of nephridia of which the first three in segments 3–5 are the largest.

TYPE SPECIES: *Trichobranthus glacialis* Malmgren, 1866.

Trichobranthus glacialis Malmgren, 1866
(fig. 36.1.a–e)

Trichobranthus glacialis Malmgren, 1866: 395, pl. 24 fig. 65; Hesse, 1917: 131; Fauvel, 1927: 288, fig. 100 a–h.

Length up to 40 mm. Tentacular lobe (fig. 36.1.a) large with a frilly margin overhanging the true mouth and numerous tentacles arising from its outer surface. Prostomium with eye spots and fused to the buccal segment, which bears a pair of horizontal wing-like lateral lobes and a ventral keel. Six gill filaments on segments 2, 3 and 4 arranged as three pairs with the dorsal gap between right and left filaments decreasing from the first to the third. Notosetae on 15 segments starting from segment 6 and long-shafted neurosetae on the same segments. Notosetae (fig. 36.1.e) with very narrow wings and smooth tips. Shafts of neurosetae (fig. 36.1.d) constricted below the head which bears an arc of about 12 long denticles above the rostrum or main fang. Abdominal uncini (fig. 36.1.b, c) avicular and appear to have three to four denticles above the main fang when seen in lateral view but one to three arcs of denticles may be distinguished in face view giving the formula MF : ca 10 : 0–20. Nephridia in segments 3–7.

TYPE LOCALITY: Spitzbergen.

RECORDS: Cape (34/18/s and 34/20/i).

DISTRIBUTION: Arctic (s, d); Atlantic (from North Sea (s) to Senegal (s) and N. Carolina (d); Magellan and Antarctic (d); Mediterranean; N.W. Pacific.

TEREBELLIDES Sars, 1835

Tentacular lobe large and deeply grooved with a frilly margin bearing numerous tentacles on its dorsal surface but no eye-spots. Mouth hidden in the groove of the tentacular lobe. A prominent lower lip. A single gill with a stout trunk bearing

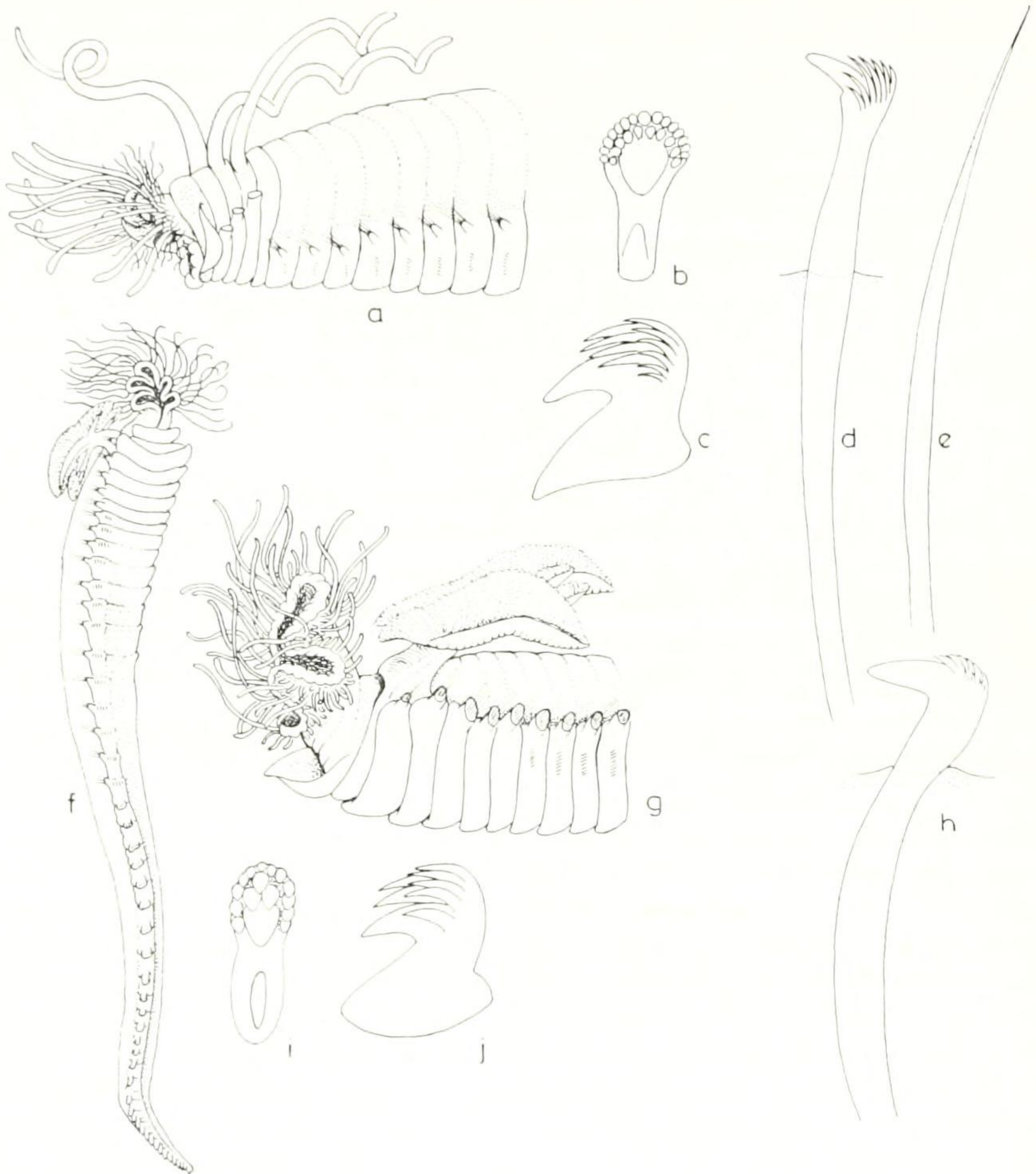


FIG. 36.1. *Trichobranthus glacialis*. (A) Anterior end. (B, C) Edge-on view and profile of abdominal uncini. (D) Thoracic hook. (E) Winged capillary. *Terebellides stroemi*. (F) Entire worm (three times life size). (G) Anterior end. (H) Thoracic hook. (I, J) Edge-on view and profile of abdominal uncini.

four lamellate lobes. About 18 thoracic setigers bearing winged capillary notosetae, the first of which starts on segment 3. Neurosetae from segment 8 (setiger 6), the thoracic ones being long-shafted hooks and the abdominal ones avicular uncini.

TYPE SPECIES: *Terebellides stroemi* Sars, 1835.

Terebellides stroemi Sars, 1835
(fig. 36.1.f-j)

Terebellides stroemi Sars, 1835: 48; Hessle, 1917: 137; Fauvel, 1927: 291, fig. 100 i-q.

Length up to 70 mm. Body (fig. 36.1.f) uniformly tapered. Tentacular lobe erect and frilly bearing numerous short tentacles on its upper surface. No eyes. A large shelf-like lower lip. The gill arises from segments 2-4 as a stout trunk bearing four lamellate lobes which are partially fused (fig. 36.1.g). The two outer lobes are larger than the inner pair. Anterior ventral margins of the third and succeeding segments prominent. Eighteen segments with smooth-tipped notopodial capillaries starting on segment 3. Neurosetae start on setiger 6 (segment 8); the first row of uncini are stout, unidentate and acicular with a right angle bend below the rostrum; uncini of subsequent rows (fig. 36.1.h) are more slender with a small rostrum surmounted by a series of minute denticles. Abdominal uncini are borne on long projecting pinnules and each is avicular with one to two arcs of denticles above the main fang; formula MF: 0-3: ca 10. (fig. 36.1.i, j).

TYPE LOCALITY: Norway.

RECORDS: Cape (28/14/d to 34/17/a and 33/27/s); Natal (29/31/d); Madagascar (s).

DISTRIBUTION: Cosmopolitan from the Arctic to the subantarctic (s, d, vd, a).

Subfamily **POLYCIRRINAE** Malmgren, 1865 (emend.)

Tentacular lobe typically enlarged and frilly with numerous tentacles but occasionally short and collar-like. Gills entirely absent. Glandular ventral pads small and restricted to the first few segments but the area around the thoracic neuropodia is often swollen and glandular. Neurosetae are avicular uncini which may appear on segment 5 but often further back or may even be entirely absent. Notosetae from segment 3 or 4 but occasionally absent. Nephridia often enlarged.

Records from southern Africa

<i>Amaeana accraensis</i> (Augener)	.	.	.	.
as <i>Amaea accraensis</i> Augener	.	.	.	.	?48Cd
<i>Amaeana trilobata</i> (Sars)	.	.	.	.	51Cs, - Ns
<i>Hauchiella tribullata</i> (McIntosh)	.	.	.	.
<i>Lanassa capensis</i> Day	.	.	.	.	44Ci, 51Cs
<i>Leaena</i> sp.	.	.	.	.	51Cs
<i>Lysilla ubianensis</i> Caullery	.	.	.	.	45PiNi
<i>Polycirrus aurantiacus</i> Grube	.	.	.	.	31Ai
<i>Polycirrus</i> cf. <i>haematodes</i> (Claparède)	.	.	.	.	51Cis
<i>Polycirrus plumosus</i> (Wollebaek)	.	.	.	.	51Cd
<i>Polycirrus tenuisetosus</i> Langerhans	.	.	.	.	51Cs
<i>Polycirrus swakopianus</i> Augener	.	.	.	.	26Wis

KEY TO GENERA

- 1 Tentacular lobe expanded with a frilly margin (fig. 36.3.e) (*POLYCIRRINAE sensu stricto*) 2
 – Tentacular lobe small and collar-like (fig. 36.4.a) 4
 2 Both notosetae and neurosetae entirely absent *HAUCHIELLA* (p. 714)
 – Notosetae present; neurosetae entirely absent 3
 – Notosetae present; neurosetae present from setiger 7 or later *POLYCIRRUS* (p. 715)
 3 Abdomen with acicular notosetae (fig. 36.3.g) *AMAEANA* (p. 718)
 – Abdomen without notosetae *LYSILLA* (p. 720)
 4 Neurosetae start on setiger 2 5
 – Neurosetae start on setiger 3–7 8
 5 Notosetae with smooth tips. Lateral lobes on segment 3 united by a dorsal ridge
 *LEAENA* (p. 721)
 – Notosetae with denticulate tips. Lateral lobes if present, not united dorsally 6
 6 Longer notosetae with a hispid swelling before the spinulose tip. Nephridia behind the
 diaphragm large and united *SPINOSPHAERA**
 – Longer notosetae not swollen nor hispid. Nephridia not united 7
 7 Both long and short notosetae with similar spinulose tips. Lateral lobes sometimes
 present on segments 2–4 *LANASSA* (p. 721)
 – Only the long notosetae with spinulose tips, the short forms with comb-like teeth. No
 lateral lobes *PHISIDIA**
 8 Neurosetae start on setiger 3 *PROCLEA**
 – Neurosetae start on setiger 7 *LAPHANIA**

HAUCHIELLA Levinsen, 1893

Tentacular lobe large and expanded with a frilly margin. No eye spots. Branchiae absent. Both notosetae and neurosetae entirely absent though notopodial papillae are visible. Body of about 70 segments. Thorax of approximately 10 segments, then a constriction followed by the swollen abdomen with annulated segments. Thorax diffusely glandular. Glandular ventral pads small but distinct in both thorax and abdomen.

TYPE SPECIES: *Polycirrus tribullata* McIntosh, 1869.

Hauchiella tribullata (McIntosh, 1869)

Polycirrus tribullata McIntosh, 1869: 351.

Hauchiella tribullata: Hesse, 1917: 233; Monro, 1930: 197; Monro, 1936: 184.

Body up to 46 mm. long, soft, diffusely glandular and swollen but often constricted between thorax and abdomen. Tentacular lobe large and frilly, roughly trefoil-shaped with rather numerous grooved tentacles. Mouth ventral with two posterior lips. No eye spots. Thorax not well-defined but appears to consist of 10 segments with notopodial papillae conspicuous after the first three. A mid-ventral groove with small rectangular ventral pads. The groove and ventral pads are continued on the swollen abdomen which consists of about 60–70 biannulate segments. No setae at all. Hesse reported four pairs of nephridia on the third, fourth, fifth and seventh segments.

RECORDS: Cape (34/18/s).

DISTRIBUTION: Norway (d); British Isles (d); subantarctic (s); Antarctic (s).

POLYCIRRUS Grube, 1850

Tentacular lobe large and expanded with a frilly margin bearing numerous tentacles but no eye-spots. Branchiae absent. Notosetae start from segment 3 and continue for a variable number of segments. Notosetae are capillaries with smooth, serrated or feathered wings. Neurosetae avicular with a crest of long denticles above the main fang; base often produced forwards. Neurosetae appear on the 7th–18th segment and continue to the end of the abdomen. Only two to four well developed ventral pads behind the lower lip followed by a glandular streak in a mid-ventral groove. Glandular swellings on the ventro-lateral sides of the thoracic segments. Large nephridia in the first three to six setigers.

TYPE SPECIES: *Polycirrus medusa* Grube, 1850.

KEY TO SPECIES

- | | | | |
|---|---|-----------|--------------------------|
| 1 | Three pairs of nephridia. Uncini start on setigers 7–12 | | 2 |
| – | Six pairs of nephridia (fig. 36.2.h). Uncini start on setigers 13–18 | | 3 |
| 2 | Twelve to twenty segments with smooth-bladed notosetae | | <i>P. tenuisetis</i> |
| – | Thirty to forty segments with smooth or hispid-bladed notosetae | | <i>P. aurantiacus</i> |
| 3 | Notosetae with smooth wings (fig. 36.2.i) | | <i>P. cf. haematodes</i> |
| – | Notosetae with narrow, denticulate wings (fig. 36.2.l) | | <i>P. swakopianus</i> |
| – | Notosetae include some with smooth wings and others with broad plumose blades (fig. 36.3.d) | | <i>P. plumosus</i> |

Polycirrus tenuisetis Langerhans, 1880
(fig. 36.2.a–c)

Polycirrus tenuisetis Langerhans, 1880: 110, pl. 5 fig. 25; Fauvel, 1927: 283, fig. 98 m–n; Day, 1961: 535.

Body evenly tapered and about 15 mm. long. Tentacular lobe longer than broad with a frilly margin bearing rather short tentacles. Twelve to nineteen segments bearing notosetae. Glandular swellings on the sides of nine thoracic setigers. Three pairs of very large nephridia in setigers 1–3. Uncini commence between setigers 7 and 10. Notosetae (fig. 36.2.c) with smooth wings. Uncini (fig. 36.2.a, b) with one to three large teeth above the main fang and then an arc of 10–12 slender denticles giving the formula MF: 1–3; 10–12.

TYPE LOCALITY: Madeira Island.

RECORDS: Cape (34/22/s).

DISTRIBUTION: English Channel (s); Madeira.

Polycirrus aurantiacus Grube, 1860
(fig. 36.2.d–f)

Polycirrus aurantiacus Grube, 1860: 110; Fauvel, 1927: 280, fig. 97 e–k.

Body up to 100 mm. long with 120 segments. Tentacular lobe (fig. 36.2.d) large and divided into basal and distal parts with two types of tentacles. No eye-spots. Thirty to forty segments with notosetae. Glandular swellings on the sides of eight to

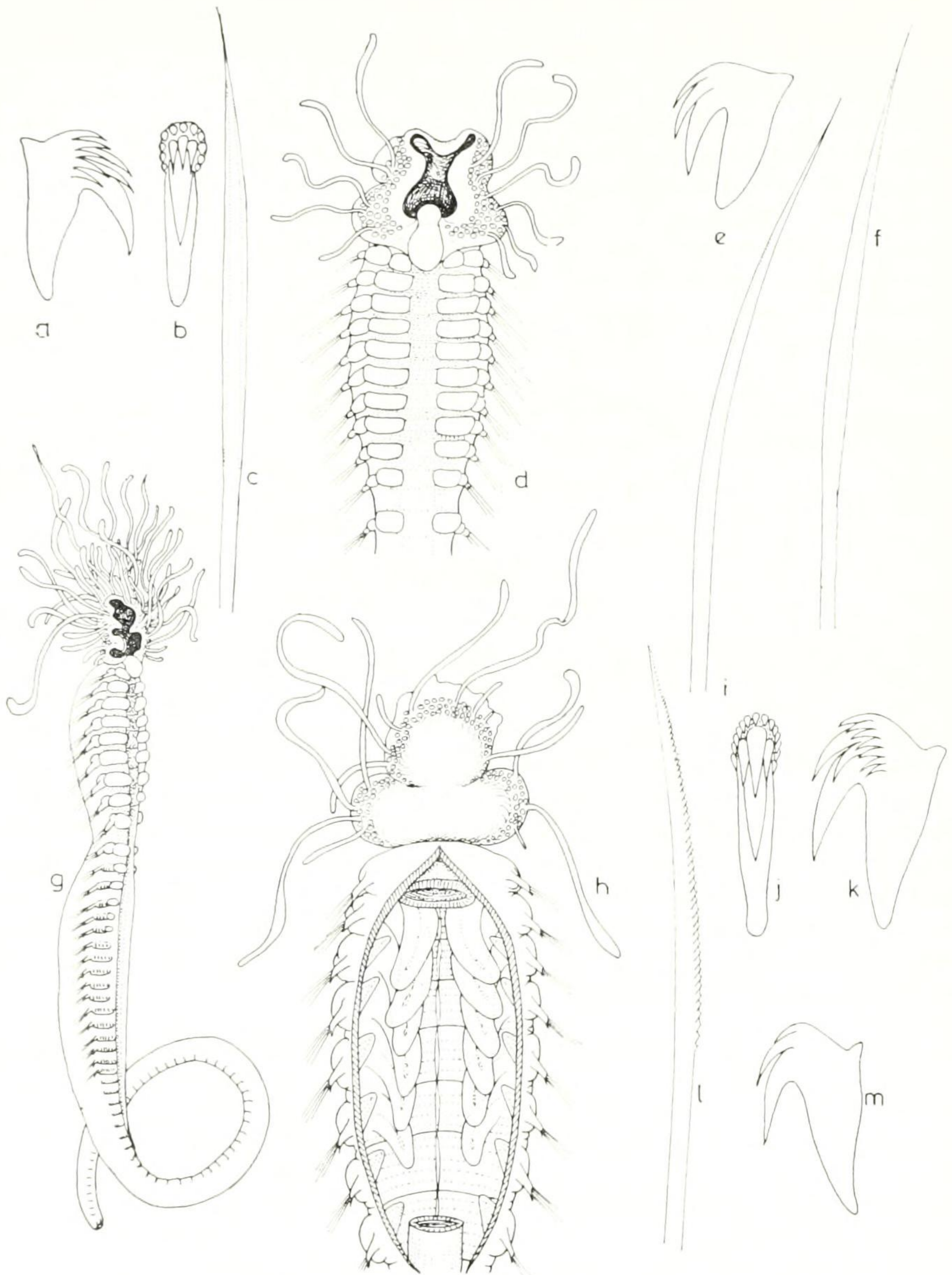


FIG. 36.2. *Polycirrus tenuisetis*. (A, B) Profile and edge-on view of uncinus. (C) Notoseta. *Polycirrus auriantiacus* (after Fauvel, 1927). (D) Ventral view of anterior end. (E) Juvenile uncinus. (F) Notoseta. *Polycirrus cf. haematodes*. (G) Entire worm (12 times life size). (H) Dissection to show nephridia. (I) Notoseta. (J, K) Edge-on view and profile of uncinus. *Polycirrus swakopianus* (after Augener). (L) Notoseta. (M) Profile of uncinus.

eleven thoracic setigers. Three pairs of nephridia of which the third in segment 6 is the largest. Notosetae (fig. 36.2.f) with smooth or hispid wings. Uncini start on setiger 8 to 12 and the posterior ones are borne on pinnules. Each uncinus (fig. 36.2.e) with numerous denticles above the main fang in the adult.

TYPE LOCALITY: France.

RECORDS: Not recorded from southern Africa.

DISTRIBUTION: English Channel (i); Madeira (i); Mediterranean (i); Angola (i).

Polycirrus* cf. *haematodes (Claparède, 1864)
(fig. 36.2.g-k)

? *Aphlebina haematodes* Claparède, 1864: 483, pl. 2 fig. 1.

Polycirrus cf. *haematodes*: Day, 1961: 535.

Body (fig. 36.2.g) about 15 mm. long. Tentacular lobe large and trefoil-shaped with pleated margins. Fourteen to twenty-seven segments bearing smooth-winged notopodial capillaries (fig. 36.2.i). Uncini (fig. 36.2.j, k) from setiger 12-13 onwards each with one to three large teeth above the main fang and the crest encircled by about 12 long denticles giving the formula MF: 1-3: ca 12. Six pairs of nephridia (fig. 36.2.h) decreasing in size from the first to the sixth. Paired ventro-lateral glandular swellings corresponding to the first 10-16 setigers; they are separated by the mid-ventral groove.

RECORDS: Cape (from 33/17/s and 34/18/i, s to 35/21/d and 34/25/s).

DISTRIBUTION: (of *S. haematodes*) Scotland (s); English Channel (i, s); Mediterranean.

Polycirrus swakopianus Augener, 1918
(fig. 36.2.l-m)

Polycirrus swakopianus Augener, 1918: 563, pl. 7 fig. 228, text-fig. 99.

Length about 16 mm. for 75 segments. Tentacular lobe trefoil-shaped. Sixteen to twenty-five segments with notosetae. Notosetae (fig. 36.2.l) with markedly denticulate wings. Fourteen to fifteen segments with paired ventro-lateral cushions. Uncini start about setiger 14 or 15 and the posterior ones are on swollen pinnules. Six pairs of nephridia with small nephridial papillae opening below the notopodia of setigers 1-6. Uncini (fig. 36.2.m) with two denticles above the main fang when seen in profile but probably more when seen in face view; dental formula MF: 3: ?.

TYPE LOCALITY: Swakopmund, South West Africa.

RECORDS: South West Africa (22/14/i and 26/15/s).

DISTRIBUTION: No other records.

Polycirrus plumosus (Wollebaek, 1912)
(fig. 36.3.a-d)

Ereutho plumosa Wollebaek, 1912: 82, pl. 21, figs. 1-4.

Polycirrus plumosus: Hessle, 1917: 224; Day, 1961: 535, fig. 13 a-d.

A large species reaching 36 mm. for about 60 segments. Tentacular lobe large and pleated. Seventeen segments with notosetae of two types: (a) with smooth narrow wings (fig. 36.3.c) and (b) broad with "plumose" blades formed by a series of transparent cones along a slender shaft (fig. 36.3.d). Uncini start on setiger 18 (the first abdominal); they are minute with few teeth, the formula being MF: 1: 1-3 (fig. 36.3.a, b). Behind the ventral lip the ventral surface is covered with minute glandular papillae up to setiger 15.

TYPE LOCALITY: Norway

RECORDS: Cape (32/17/d and 34/18/d).

DISTRIBUTION: Norway. (s).

AMAEANA Hartman, 1959

(= *AMAEA* Malmgren, 1866, pre-occupied)

Tentacular lobe expanded and trefoil-shaped with an anterior tongue-like lobe and a posterior frilled portion with numerous short tentacles. No eye-spots. No branchiae. Ten to thirteen thoracic segments with notosetae starting on segment 3. No thoracic neuropodia or neurosetae. About five achaetous segments at the end of the thorax. Abdomen of numerous uniramous segments with conical notopodial pinnules bearing acicular setae. No neuropodia or neurosetae. Anterior nephridia rather larger than posterior ones and all open on small papillae just below the notopodia. Sides of body swollen and glandular below the thoracic notopodia. Small ventral pads in a groove.

TYPE SPECIES: *Polycirrus trilobata* Sars, 1863.

KEY TO SPECIES

- | | | | | | | |
|---|--|---|---|---|---|----------------------|
| 1 | The first ten setigers bearing smooth-winged notosetae | . | . | . | . | <i>A. trilobata</i> |
| - | The first 11-13 setigers bearing barbed notosetae | . | . | . | . | <i>A. accraensis</i> |

Amaeana trilobata (Sars, 1863)
(fig. 36.3.e-h)

Polycirrus trilobata Sars, 1863: 53.

Amaea trilobata: Fauvel, 1927: 285, fig. 99 a-e.

Amaeana trilobata: Day, 1961: 533.

Body (fig. 36.3.h) about 20 mm. long for about 40 segments. It is swollen anteriorly and cylindrical posteriorly. The first 10 setigers with long, slender notopodia bearing fine, smooth-winged capillaries (fig. 36.3.f) which are completely retractile. Thorax arched dorsally, swollen and glandular laterally and with a

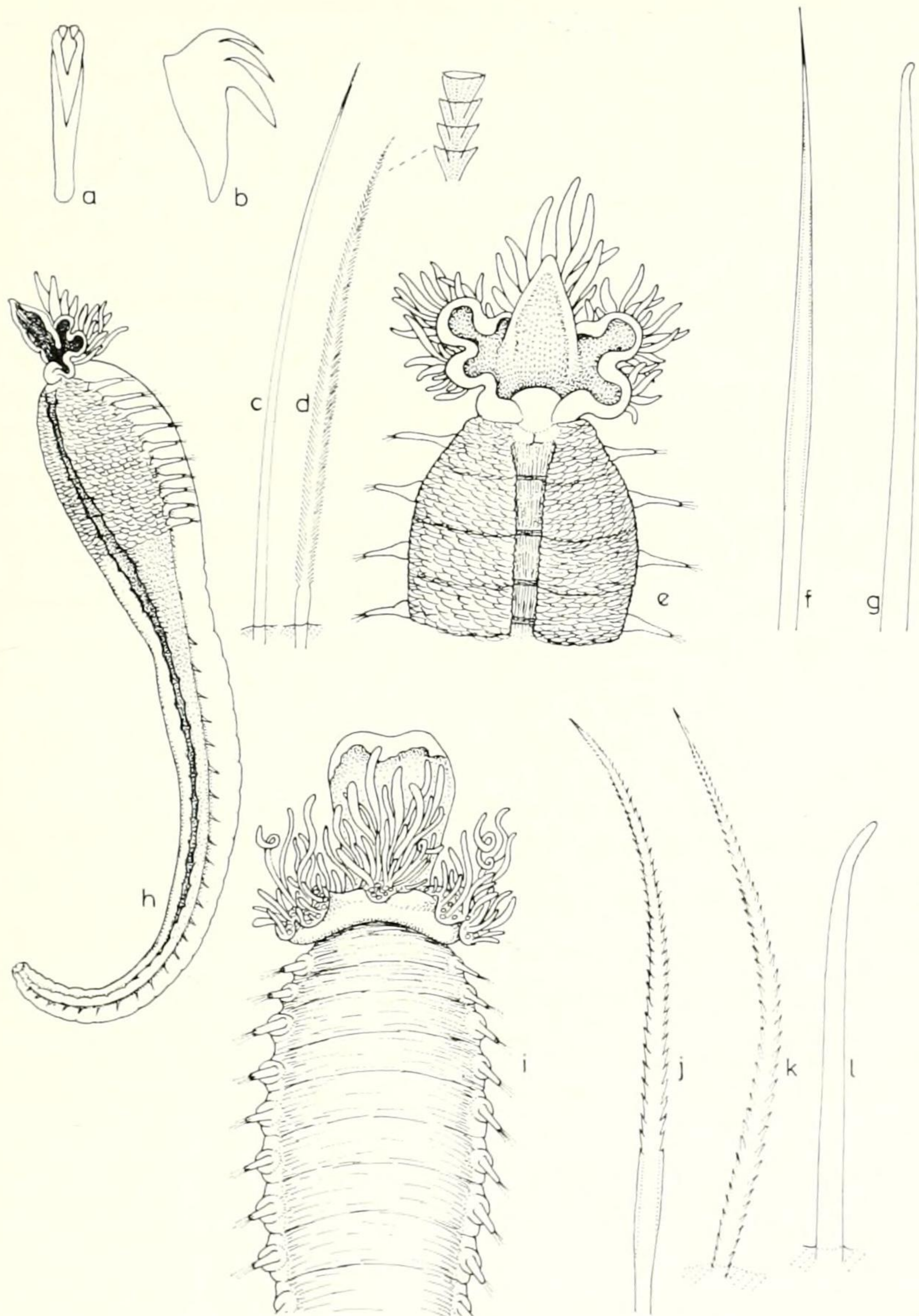


FIG. 36.3. *Polycirrus plumosus*. (A, B) Edge-on view and profile of uncinus. (C, D) Smooth and plumose notosetae. *Amaeana trilobata*. (E) Ventral view of head. (F) Thoracic winged capillary. (G) Abdominal acicular seta. (H) Entire worm (five times life size). *Lysilla ubianensis*. (I) Dorsal view of anterior end. (J) Barbed notoseta. *Amaeana accraensis* (after Augener). (K) Barbed notoseta. (L) Abdominal acicular seta.

Lysilla ubianensis Caullery, 1944
(fig. 36.3.i-j)

Lysilla ubianensis Caullery, 1944: 197, fig. 156; Day, 1957: 114.

Body swollen, about 30 mm. long. Head (fig. 36.3.i) with an anterior tongue-like upper lip above which is a broad frilly tentacular lobe bearing numerous grooved tentacles. Thorax with 10-12 segments bearing notosetae. Notosetae (fig. 36.3.j) with barbed wings. Nephridial papillae on all segments bearing notosetae and sometimes swollen from the fourth onwards. Thorax with a mid-ventral groove and broad glandular ventro-lateral ridges. Ventral pads in the groove narrow and not segmentally defined. Abdomen with about 30 segments. It is grooved laterally and ventrally and segmental boundaries are indistinct. No notopodia or neuropodia and no setae at all.

TYPE LOCALITY: Malay Seas.

RECORDS: Natal (29/31/i); Mocambique (26/32/i).

DISTRIBUTION: East Indies.

LEAENA Malmgren, 1866

Tentacular lobe small and collar-shaped. Branchiae absent. Anterior segments with lateral lobes, those on segment 3 being united by a transverse ridge across the dorsum. Notosetae from segment 4. Notosetae are all smooth-winged capillaries. Avicular uncini from segment 5 (second setiger). Nephridia fairly large, not united and present on segments 3, 6, 7, 8 and 9.

TYPE SPECIES: *Leaena abbranchiata* Malmgren, 1866.

***Leaena* sp.**

Leaena sp. Day, 1961: 537.

Only a juvenile of 7 mm. is known. Lower lip swollen. Lateral lobe on segment 2 continuous across the ventrum. Lateral lobe on segment 3 continuous across the dorsum. Seventeen segments with smooth, broad-winged notosetae starting on segment 4. Uncini from segment 5 (setiger 2) and arranged in an alternating row towards the end of the thorax. Uncini avicular with a close-set crest of denticles above the main fang.

LANASSA Malmgren, 1866

Tentacular lobe small and collar-shaped. Anterior segments with or without lateral lobes. Notosetae from segment 4. All notosetae with small wings and denticulate tips. Neurosetae avicular and present from segment 5 (setiger 2) onwards; they are arranged in double rows on some segments. Large nephridia in segment 3, none in 4 and 5 but present again in segments 6, 7 and 8.

TYPE SPECIES: *Lanassa nordenskioldi* Malmgren, 1866.

Lanassa capensis Day, 1955
(fig. 36.4.a-c)

Lanassa capensis Day, 1955: 441, fig. 7 c-f.

Body about 20 mm. long, slender, and pale in colour. Tentacular lobe (fig. 36.4.a) small and has few tentacles. A few eye-spots. No gills. No lateral lobes on anterior segments. Thirteen well marked ventral pads followed by a glandular streak reaching setiger 20. Notosetae present on 27 segments starting from segment 4. Both long and short forms of notosetae with a short winged portion followed by a well developed denticulate tip. Uncini from setiger 2 to the end of the body. No uncigerous pinnules. Each uncinus (fig. 36.4.b, c) is avicular with a short base and four to five denticles above the main fang when seen in lateral view but an edge-on view shows four arcs of denticles giving the formula MF: 2-3: 4-4: ca 6: ca 16.

TYPE LOCALITY: Still Bay, South Africa.

RECORDS: Cape (34/18/i, s and 34/21/i).

DISTRIBUTION: No other records.

Subfamily **THELEPINAE** Malmgren, 1866

Tentacular lobe either short and collar-shaped or prolonged and frilled. Numerous grooved tentacles and sometimes eye-spots. Branchiae usually present as simple cylindrical filaments on segments 2, 3 and often 4. Lateral lobes sometimes present. Glandular ventral pads present or absent. Smooth tipped notosetae* start on segment 2 or 3 and sometimes extend to within a few segments of the pygidium. Avicular uncini with forwardly projecting bases bearing an attachment button, are present in single or occasionally double rows; they start between segments 4 and 9 but may be entirely absent.

Records from southern Africa

<i>Euthelepus kinsemboensis</i> Augener*	. . . . .	26Ai
<i>Streblosoma abbranchiata</i> Day	. . . . .	55Ca
<i>Streblosoma chilensis</i> (McIntosh)	. . . . .	55Ca
<i>Streblosoma hesslei</i> Day	. . . . .	44Ci, ? - Ms
<i>Streblosoma persica</i> (Fauvel)	. . . . .	45Pi, - Nd
as <i>Pseudothelepus nyanganus</i> Augener	. . . . .	26Ai
<i>Telothelepus capensis</i> Day	. . . . .	44Ci, 51Cs
<i>Thelepus comatus</i> (Grube)	. . . . .	44Ci
<i>Thelepus pequenianus</i> Augener	. . . . .	26Wis, 44Ci, 51Cs
as <i>Thelepus</i> sp.	. . . . .	13Ci
<i>Thelepus plagiostoma</i> Schmarda	. . . . .	27Mi, 35Ci, 36Ci, 44Ci, 45PiNi, 51Cs
as <i>Thelepus setosus</i> var. <i>africanus</i> Day	. . . . .	40PiNi
<i>Thelepus setosus</i> (Quatrefages)	. . . . .	45 Pi, - Ps
<i>Thelepus triserialis</i> (Grube)	. . . . .	40Ni, 44Ci, 51Cs - Ms

**Euthelepus kinsemboensis* Augener, 1918 has denticulate notosetae, possibly it should be referred to the genus *Amphitrite*.

KEY TO GENERA

- 1 Notosetae start on segment 2 (first branchiferous) *STREBLOSOMA* (p. 723)
 – Notosetae start on segment 3 (second branchiferous) 2
 2 Lateral lobes present on segments 2–4. (fig. 36.5.e) *EUTHELEPUS* (p. 726)
 – No lateral lobes 3
 3 Uncini from setiger 3. Tentacular lobe short and collar-like *THELEPUS* (p. 727)
 – Uncini from setiger 9. Tentacular lobe short and collar-like *PARATHELEPUS**
 – Uncini absent from the thorax but present on the abdomen. Tentacular lobe elongated
 with a frilled margin (fig. 36.6.b) *TELOTHELEPUS* (p. 731)

STREBLOSOMA Sars, 1872

Tentacular lobe small and collar-like bearing numerous tentacles. No lateral lobes on anterior segments. Nil to three pairs of filiform gills on segments 2–4. Smooth-tipped notopodial capillaries start on segment 2 (first branchiferous). Uncini start on segment 5 (setiger 4) and extend over a variable number of segments. Nephridia increase in size from segment 3 to 8 and are present on segment 5.

TYPE SPECIES: *Grymaea bairdi* Malmgren, 1866.

KEY TO SPECIES

- 1 Gills entirely absent (fig. 36.4.d) *S. abbranchiata*
 – Two pairs of gills, each as a single filament (fig. 36.4.h) *S. chilensis*
 – Three pairs of gills, each consisting of many filaments 2
 2 Posterior uncini arranged in loops. Thirty-three segments with notosetae *S. hesslei*
 – Posterior uncini in single rows. Thirty-eight or more segments with notosetae *S. persica*

Streblosoma abbranchiata Day, 1963
 (fig. 36.4.d–g)

Streblosoma abbranchiata Day, 1963: 369, fig. 3 c–f.

Tubes fragile and covered with foraminiferan shells. Body uniformly slender, about 30 mm. long by 1.5 mm. wide for 60–70 segments. Tentacular lobe (fig. 36.4.d) short and collar-like with six to ten long tentacles. No eye-spots. Upper lip overhanging the ventral mouth. Lower lip small. No lateral lobes on anterior segments. No gills. Notosetae from segment 2 and continue for at least 19 segments, the first three being smaller than the rest. All notosetae are smooth-tipped capillaries (fig. 36.4.g). Uncini appear on segment 5 (setiger 4), are arranged in single rows throughout and are borne on low uncigerous ridges on the abdomen. Each uncinus (fig. 36.4. e, f) has a close-set cap of long denticles above the main fang. They are irregularly arranged but approximate to the dental formula MF: 4–5: ca 8: ca 12. Basal prow well marked and has a dorsal button.

TYPE LOCALITY: In 2269 metres off Cape Town.

RECORDS: Cape (33/16/a, 34/16/a, 34/17/a).

DISTRIBUTION: No other records.

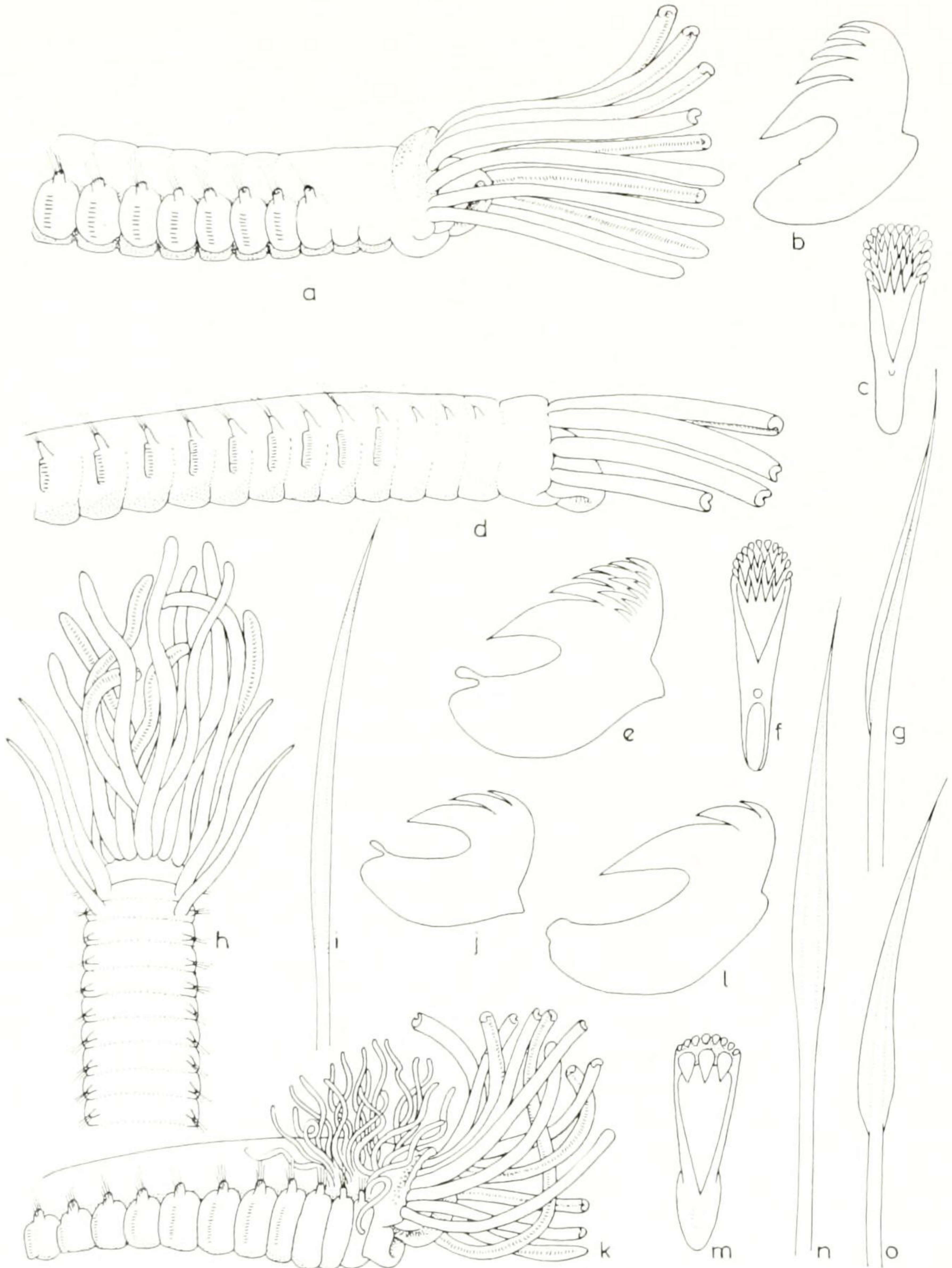


FIG. 36.4. *Lanassa capensis*. (A) Anterior end. (B, C) Profile and edge-on view of uncinus. *Streblosoma abbranchiata*. (D) Anterior end. (E, F) Profile and edge-on view of uncinus. (G) Notoseta. *Streblosoma chilensis* (modified from McIntosh, 1885). (H) Anterior end. (I) Notoseta. (J) Uncinus. *Streblosoma hesslei*. (K) Anterior end. (L, M) Profile and edge-on view of uncinus. (N, O) Long and short types of notosetae.

Streblosoma chilensis (McIntosh, 1885)
(fig. 36.4.h-j)

Euthelepus chilensis McIntosh, 1885: 467, pl. 51 figs. 4-5; pl. 28A figs. 14-15.
Streblosoma chilensis: Day, 1963: 370.

Body about 50 mm. long by 2.5 mm. broad. Tentacular lobe (fig. 36.4.h) short and collar-like with 12 or more long tentacles. A well developed upper lip and a small lower lip. No eye-spots. Two pairs of gills on segments 2 and 3, each consisting of a single long filament. No lateral lobes on anterior segments. Notosetae from segment 2 (first branchiferous) and continue for at least 20 segments. Notosetae (fig. 36.4.i) have slender wings and smooth tips. Uncini from segment 5 (setiger 4) and are arranged in single rows throughout. In lateral view (fig. 36.4.j) each uncinus appears to have two teeth above the main fang, the first large and the second very small; dental formula MF: 1: 1-3. The prow of the uncinus is well developed and has a dorsal button. About nine ventral pads. Tube massive and made of mud.

TYPE LOCALITY: In 2610 fathoms, off Valparaiso.

RECORDS: Cape (34/18/a).

DISTRIBUTION: Chile (a).

Streblosoma hesslei Day, 1955
(fig. 36.4.k-o)

Streblosoma hesslei Day, 1955: 439, fig. g-l.

Body about 25 mm. long with 73 segments. Tentacular lobe (fig. 36.4.k) short with numerous eye-spots. Three branchiferous segments each bearing several filaments. Thirty-three segments with notosetae. Notosetae include long and short smooth-winged capillaries (fig. 36.4.n, o). No lateral lobes on anterior segments. Fifteen ventral pads. The first seven rows of uncini are in single rows but thereafter the rows become looped and eventually double rows are formed. Abdominal uncini on well marked pinnules. Uncini with two rows of denticles above the main fang and a large base with a broad attachment button at its end (fig. 36.4.l, m). Dental formula of uncinus MF: 2-5: 5-9.

TYPE LOCALITY: Robberg, South Africa.

RECORDS: Cape (34/23/i); ? Madagascar (s).

DISTRIBUTION: ? Endemic.

Streblosoma persica (Fauvel, 1908)
(fig. 36.5.a-d)

Grymaea persica Fauvel, 1908: 386; Fauvel, 1911: 419, pl. 20 figs. 35-43.
Streblosoma persica: Fauvel, 1953: 432, fig. 229 and 230 c-m.

Body (fig. 36.5.a) slender, evenly tapered, up to 60 mm. long. Upper lip hood-shaped, lower lip well defined. Tentacular lobe small and collar-like with short tentacles. No eye-spots. Three pairs of branchiae in the form of about six slender

filaments on segments 2–4 with a median gap between lateral groups. Notosetae from the first branchiferous segment to the end of the abdomen. Notosetae are short, broad-winged capillaries with smooth tips. Uncini from setiger 4, arranged in single rows throughout (fig. 36.4.b), and are borne on low pinnules in the abdomen. Dental formula of uncinus MF : 2–3 : 1–5 (fig. 36.5.d). Prow of uncinus (fig. 36.5.c) well developed and rounded with the dorsal button slanting forwards. Thirteen well marked ventral pads which are not separated from the uncigerous tori. Nephridial papillae not seen.

TYPE LOCALITY : Persian Gulf.

RECORDS : Natal (29/32/d) ; Mocambique (26/32/i).

DISTRIBUTION : Persian Gulf ; Gulf of Manaar ; Krusadai Is. ; tropical western Africa from Senegal (s) and Sao Thomé (i) to Angola (i).

EUTHELEPUS McIntosh, 1885

Tentacular lobe small and collar-like. Anterior segments with lateral lobes. Filamentous gills on segments 2–4 sometimes reduced to a single pair of filaments per segment. Smooth tipped notopodial capillaries start on segment 3 (second branchiferous) and extend over about 20 segments. Uncini which have short bases start on segment 5 (setiger 3). Distinct ventral pads present.

TYPE SPECIES : *Euthelepus setabulensis* McIntosh, 1885.

Euthelepus kinsemboensis Augener, 1918* (fig. 36.5.e–i)

Euthelepus kinsemboensis Augener, 1918 : 548, pl. 6 fig. 161, pl. 7 fig. 250, text-fig. 93.

Tentacular lobe (fig. 36.5.e) broad and hood-shaped. Eyes not seen. Ventral lip stout and well defined. Small lateral lobes on segments 2–4. Simple filamentous gills in right and left groups as follows : segment 2 with 3 and 3 ; segment 3 with 2 and 2 ; segment 4 with 1 and 1. Notosetae start on segment 3 (second branchiferous) and continue for 20 segments (posterior segments missing). Ventral pads not clearly defined after the first few. Notosetae of two types – broad-winged capillaries (fig. 36.5.h) and others with fine tapered blades with the blade serrate (fig. 36.5.i). Uncini from segment 5 (third setiger) onwards and are arranged in single rows. In profile (fig. 36.5.f) the base is short with an anterior prow and button and three to four teeth above the main fang ; face view (fig. 36.5.g) shows the formula as MF : 2 : 3–4.

TYPE LOCALITY : Tropical western Africa.

RECORDS : Not recorded from southern Africa.

DISTRIBUTION : Angola (i) ; New Caledonia (i).

*Possibly this species should be referred to *Amphitrite* though notosetae are said to start on segment 3.

THELEPUS Leuckart, 1849

Tentacular lobe short and collar-like, usually with numerous eye-spots. Branchiae as numerous simple filaments forming transverse rows across segments 2, 3 and sometimes 4. No lateral lobes on anterior segments. Notosetae as smooth-tipped capillaries starting on segment 3 (second branchiferous) and extending over at least half the body. Uncini with the base prolonged forwards like the prow of a ship on the upper surface of which is an attachment button. Uncini start on setiger 3 and continue to the posterior end. Ventral pads present. Nephridia in segments 4-7.

TYPE SPECIES: *Amphitrite cincinnata* Fabricius, 1780.

KEY TO SPECIES

- | | | |
|---|--|-------------------------|
| 1 | Two branchiferous segments | <i>T. cincinnatus</i> * |
| - | Three branchiferous segments | 2 |
| 2 | Uncini always in a single row | 3 |
| - | Uncini of middle and later segments in incomplete double rows (fig. 36.5.l, m). (Base of uncinus with both prow and button well developed) | <i>T. comatus</i> |
| 3 | Prow of uncinus poorly developed | 4 |
| - | Prow of uncinus well developed with a smaller button above | 5 |
| 4 | Button of uncinus superior and separated by a notch from the small prow (fig. 36.6.a). Notosetae stop halfway along abdomen | <i>T. setosus</i> |
| - | Button of uncinus terminal and in line with the tapered prow (fig. 36.6.o). Notosetae to near end of abdomen | <i>T. plagiostoma</i> |
| 5 | Prow of uncinus broadly rounded and the button directed upward (fig. 36.5.p). Notosetae stop halfway along abdomen | <i>T. triserialis</i> |
| - | Prow of uncinus and button equally developed with a deep notch between them (fig. 36.5.q). Notosetae continue to near pygidium | <i>T. pequenianus</i> |

Thelepus cincinnatus (Fabricius, 1780)

Amphitrite cincinnata Fabricius, 1780: 286.

Thelepus cincinnatus: Fauvel, 1927: 271, fig. 95 i-m.

Body up to 200 mm. long with 100 segments. Tentacular lobe with eye-spots. Two branchiferous segments bearing numerous branchial filaments. Glandular ventral pads indistinct. Notosetae on 30-40 segments. Uncini always in a single row and in the abdomen they are borne on rectangular pinnules. Prow of uncinus broad, and much larger than the button which is directed upwards. Dental formula of uncinus MF : 2 : 1-3.

TYPE LOCALITY: Greenland.

RECORDS: No valid record from southern Africa.

DISTRIBUTION: Arctic; North Atlantic; Mediterranean (s).

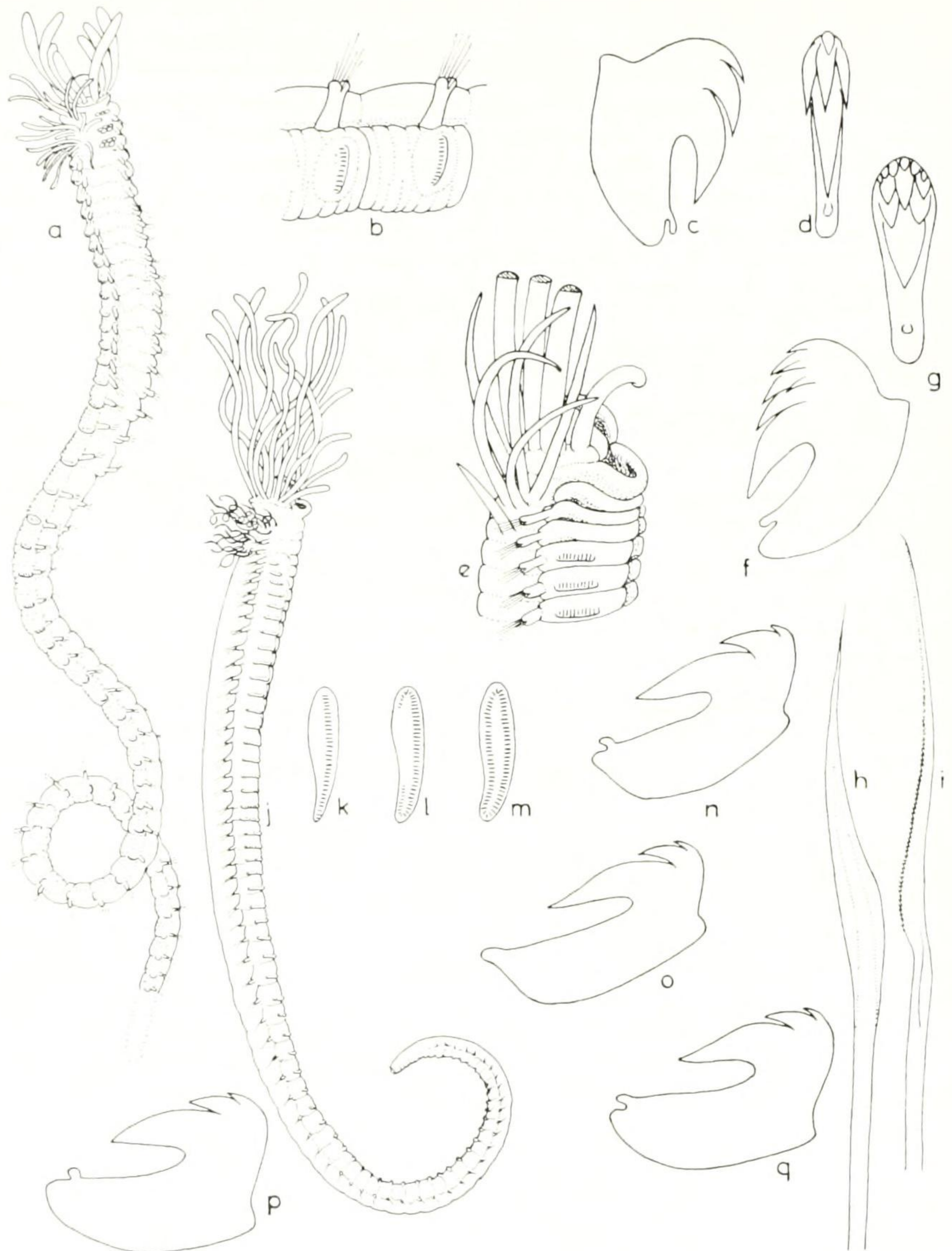


FIG. 36.5. *Streblosoma persica*. (A) Entire worm (three times life size). (B) Parapodia of middle segments. (C, D) Profile and edge-on view of uncinus. *Euthelepus kinsemboensis* (modified from Augener, 1918). (E) Anterior end. (F, G) Profile and edge-on view of uncinus. (H, I) Two types of notosetae. *Thelepus comatus*. (J) Entire worm (three times life size). (K, L, M) Uncigerous tori from the 5th, 7th and 12th setigers, showing the development of double rows of uncini. (N) uncinus. *Thelepus plagiostoma*. (O) Uncinus. *Thelepus triserialis*. (P) Uncinus. *Thelepus pequenianus*. (Q) Uncinus.

Thelepus comatus (Grube, 1859)
(fig. 36.5.j-n)

Terebella comata Grube, 1859: 109.

Thelepus comatus: Day, 1955: 439, fig. 6 d.

Body (fig. 36.5.j) up to 60 mm. long with 100 segments. Tentacular lobe without eye-spots. Three branchiferous segments each bearing numerous gill filaments. Notosetae start on segment 3 and continue almost to the pygidium. Uncini of the first five to seven setigers in single rows (fig. 36.5.k); thereafter the rows become loops (fig. 36.5.l) and finally double rows are formed (fig. 36.5.m). Abdominal uncini borne on short ventro-lateral ridges. Prow and button of uncinus equally developed with a deep notch between them (fig. 36.5.n). Dental formula of uncinus MF: 2: 11-15.

TYPE LOCALITY: Chile.

RECORDS: Cape (32/18/i).

DISTRIBUTION: Chile (i); Tristan da Cunha (i); S. Arabia (s).

Thelepus plagiostoma (Schmarda, 1861)
(fig. 36.5.o)

Terebella plagiostoma Schmarda, 1861: 41, pl. 24 fig. 196.

Thelepus plagiostoma: Fauvel, 1953: 430, fig. 228 a-f; Day, 1955: 437, fig. 6 c.

Body up to 100 mm. long with 200 segments. Tentacular lobe with eye-spots. Three branchiferous segments with numerous gill filaments. Notosetae continue almost to the pygidium. Uncini always in single rows; uncigerous tori poorly developed and abdominal segments short and crowded. Uncini with the prow absent and the button terminal and directed forwards (fig. 36.5.o). Dental formula of uncinus MF: 2: 1-3.

TYPE LOCALITY: New Zealand.

RECORDS: Cape (from 34/18/i and 34/22/i, s to 32/38/i); Natal (from 31/29/i to 27/32/i); Mocambique (26/32/i and 23/35/s); Madagascar (s).

DISTRIBUTION: Chile; subantarctic (Falkland Is. (s), Magellan Area (d), New Zealand (d)); Indo-west-Pacific (Red Sea (i) and Madagascar (i) to Japan and Australia).

Thelepus setosus (Quatrefages, 1865)
(fig. 36.6.a)

Phenacia setosa Quatrefages, 1865: 376.

Thelepus setosus: Fauvel, 1927: 273, fig. 95 a-h.

Body up to 150 mm. long with 80-120 segments. Tentacular lobe with eye-spots. Three branchiferous segments bearing numerous gill filaments. About 15 ventral pads. Notosetae continue two-thirds the way along the abdomen. Uncini

always in a single row. Uncigerous tori well developed and form conspicuous pinnules along the abdomen. Uncini (fig. 36.6.a) with the prow smaller than the button above it and a slight notch between the two. Dental formula of uncinus MF : 2-3 : 0-2.

TYPE LOCALITY : France.

RECORDS : Mocambique Island (i), (24/34/s).

DISTRIBUTION : North Atlantic from Scotland (s) and the English Channel (i, s), Ireland to Senegal (i, s); Argentina (s), Falklands (i, s, d), North Carolina (i) and South Georgia (i, s); Mediterranean (s); Pacific (W. Canada and Japan to S. California and New Caledonia); Red Sea and Indian Ocean.

Thelepus triserialis (Grube, 1855)
(fig. 36.5.p)

Terebella triserialis Grube, 1855 : 118, pl. 4 fig. 16.

Thelepus triserialis : Fauvel, 1927 : 274, fig. 95 n-r; Day, 1955 : 439, fig. 6 a.

Body up to 100 mm. long, swollen anteriorly, with 100-150 segments. Tentacular lobe with eye-spots. Three branchiferous segments bearing numerous gill filaments. Notosetae stop halfway along abdomen. Uncini always in a single row. Abdominal uncini borne on projecting pinnules. Prow of uncinus (fig. 36.5.p) broad and rounded and much larger than the dorsal button which is directed upwards. Dental formula of uncinus MF : 1-3 : 0-5.

TYPE LOCALITY : Sicily.

RECORDS : Cape (34/20/i); Natal (30/30/i); Madagascar (s).

DISTRIBUTION : Mediterranean (i, s).

Thelepus pequenianus Augener, 1918
(fig. 36.5.q)

Thelepus pequenianus Augener, 1918 : 545; Day, 1955 : 439, fig. 6 b.

Body up to 70 mm. long with 150 segments. Tentacular lobe with eye-spots. Three branchiferous segments. Notosetae continue almost to pygidium. Uncini always in a single row. Uncigerous pinnules well developed on abdomen. Uncini (fig. 36.5.q) with the prow and button subequal and with a deep notch between them. Dental formula of uncinus MF : 2 : 0-5.

TYPE LOCALITY : Luderitzbucht, South West Africa.

RECORDS : South West Africa (26/15/i, s); Cape (from 29/16/i and 34/18/i, s to 33/26/s).

DISTRIBUTION : Endemic.

TELOTHELEPUS Day, 1955

Tentacular lobe large and elongate bearing numerous fine tentacles and a large and expanded frilly margin. Branchiae as numerous simple filaments arising from prominent bosses on two or three segments starting from segment 2. No lateral lobes on anterior segments. Notosetae as smooth-winged capillaries starting on segment 3 (second branchiferous) and restricted to the thorax. No neurosetae on the thorax but present as avicular uncini on the abdomen.

TYPE SPECIES: *Telothelepous capensis* Day, 1955.

Telothelepous capensis Day, 1955
(fig. 36.6.b-c)

Telothelepous capensis Day, 1955: 440, fig. 6 e-f.

Body about 50 mm. long with 100 segments. Tentacular lobe (fig. 36.6.b) long and bent back dorsally. Numerous short fine tentacles and an expanded frilly margin. No eye-spots. Numerous simple gill filaments borne on a pair of bosses on segments 2 and 3. No lateral lobes on anterior segments. Notosetae are smooth-winged capillaries and start on the second branchiferous segment and total 15 bundles. Conspicuous nephridial papilla on segments 5-7. Ventral pads absent. No uncini on the thorax but present on the abdomen and borne on square pinnules. Each uncinus (fig. 36.6.c) with a short base, a deep prow with a dorsal button and a dental formula of MF: 5-6: 8-10. No permanent tube.

TYPE LOCALITY: Langebaan Lagoon, South Africa.

RECORDS: Cape (33/18/i, s, 34/23/e, 33/27/e) - locally common on sheltered sandbanks.

DISTRIBUTION: Endemic.

Subfamily **TEREBELLINAE** Grube, 1850

(including AMPHITRICACEA and ARTACAMACEA Malmgren, 1865)

Tentacular lobe short and collar-like with numerous grooved tentacles. Buccal segment usually smooth, rarely with a papillose proboscis. Gills usually present on segments 2-4, often branched, rarely filamentous. Lateral lobes sometimes present on segments 2-4. Glandular ventral pads present. Notosetae start on segment 3 or 4 and are smooth-winged capillaries sometimes with denticulate tips. Neurosetae are always present as avicular or pectiniform uncini and start on segment 5; in later thoracic segments they are in double or alternating rows.

Records from southern Africa

<i>Amphitrite pauciseta</i> Day	.	.	.	.	56Cd
<i>Amphitrite cirrata</i> (Müller)	.	.	.	.	55Ca
<i>Artacama proboscidea</i> Malmgren	.	.	.	.	56Cd
? <i>Colymmatops granulatus</i> Peters	.	.	.	.	1Pi

<i>Eupolymnia nebulosa</i> (Montagu)	. . .	51Csd, - Ms
as <i>Polymnia nebulosa</i> (Montagu)	. . .	27Mi, 44Ci, 45Pi
as <i>Polymnia capensis</i> McIntosh	. . .	32Nd
<i>Lanice conchilega</i> (Pallas)	. . .	26Ai, 48WsCs, - NsPs
as <i>Lanice wollebaeki</i> (Caullery)	. . .	40NiPi, 45Pi, 51Cs
<i>Loimia medusa</i> (Savigny)	. . .	26Ai, 27Mi, 40NiPi,
		45PiNi, 51Cs, - NdMs
as <i>Terebella medusa</i> Savigny	. . .	1Pi
as <i>Lanice fauveli</i> Day	. . .	36Cs
<i>Nicolea macrobranchia</i> (Schmarda)	. . .	26Wis, 33Cs, 35Ci,
		44Ci, 51Cs
as <i>Nicolea claparedii</i> (Grube)	. . .	21Ci
as <i>Terebella macrobranchia</i> Schmarda	. . .	4Ci
<i>Nicolea venustula</i> (Montagu)	. . .	16Wi, 21Ci, 51 Csd,
		- NsMs
<i>Nicolea venustula</i> var. <i>africana</i> Augener	. . .	26Ais
<i>Pista brevibranchia</i> Caullery	. . .	40Pi, 45Pi
<i>Pista cristata</i> (Müller)	. . .	48Csd, - Ns
? <i>Pista cristata</i> var. <i>capensis</i> McIntosh	. . .	32Pi
<i>Pista fasciata</i> (Grube)	. . .	
as <i>Terebella fasciata</i> Grube	. . .	15Cs
<i>Pista folliigera</i> Caullery	. . .	27Mi, 40Ni, 44Ci,
		51Cs, - Ms
<i>Pista grubei</i> Augener	. . .	34Wsd
<i>Pista macrolobata</i> Hessle	. . .	45Pi, - PsdMs
<i>Pista quadrilobata</i> (Augener)	. . .	51Wi
as <i>Nicolea quadrilobata</i> Augener	. . .	26AiWi
as <i>Pista qolora</i> Day	. . .	44Ci, 51Cs
<i>Pista unibranchia</i> Day	. . .	56Cs
<i>Terebella ehrenbergi</i> Grube	. . .	45Pi, - Pd
<i>Terebella pterochaeta</i> Schmarda (partim)	. . .	4Ci, 36Ci, 40Ni,
		44Ci, 51Cs
as <i>Leprea pterochaeta</i> (Schmarda)	. . .	11Wi, 15Cs, 16Wi,
		26Wis
as <i>Schmardanella pterochaeta</i> (Schmarda)	. . .	10Ci, 13Ci
<i>Terebella schmardai</i> Day	. . .	36Ci, 44Ci, 51Cs
as <i>Terebella pterochaeta</i> Schmarda (partim)	. . .	4Ci
as <i>Terebella lapidaria</i> Augener (non Kahler)	. . .	26Wis
<i>Terebellobranchia natalensis</i> Day	. . .	40Ni

KEY TO GENERA

- 1 A papillose proboscis below the mouth (fig. 36.6.d). (Notosetae with smooth tips) **ARTACAMA** (p. 733)
- No papillose proboscis 2
- 2 Notosetae with smooth tips 3

-	Notosetae with denticulate tips (fig. 36.10.e)	8
3	No lateral lobes on segments 2-4. (Two pairs of gills)	<i>NICOLEA</i> (p. 735)
-	Lateral lobes present	4
4	Uncini of the first row or first few rows differ from those of later segments, having the base produced backwards as a long shaft (fig. 36.7.i). Not more than two pairs of gills	5
-	Uncini of the first row short and similar to those of later segments. Three pairs of gills	6
5	Lateral lobes present on segments 2 and 4 at least (fig. 36.7.a). Posterior nephridia separate.	<i>PISTA</i> (p. 736)
-	Lateral lobes present on segment 3 only. Posterior nephridia united	<i>LANICIDES*</i>
6	Uncini normal and avicular with close-set arcs of denticles above the main fang	7
-	Uncini pectiniform with a single vertical series on teeth (fig. 36.9.c, d)	<i>LOIMIA</i> (p. 742)
7	Mouth of tube fringed and flattened (fig. 36.8.n). Uncini set back to back on posterior thorax	<i>LANICE</i> (p. 743)
-	Mouth of tube not fringed or flattened. Uncini not set back to back	<i>EUPOLYMNIA</i> (p. 744)
8	Lateral lobes present on segments 2, 3 and often 4	<i>AMPHITRITE</i> (p. 746)
-	Lateral lobes absent	9
9	Notosetae start on segment 3 (second branchiferous)	<i>NEOLEPREA*</i>
-	Notosetae start on segment 4	10
10	Two to three pairs of gills on segments 2-4	<i>TEREBELLA</i> (p. 747)
—	Three pairs of gills at intervals along thorax (fig. 36.10.o)	<i>TEREBELLOBRANCHIA</i> (p. 750)

ARTACAMA Malmgren, 1866

Tentacular lobe short and folded. A swollen papillose proboscis arising from the buccal segment below the mouth. Three pairs of filamentous gills, each gill consisting of several filaments arising from a common base. No lateral lobes on segments 2-4. Nephridia separate, the anterior one on segment 3 large and the posterior ones on segments 6, 7, 8 and 9 smaller. Smooth-tipped notosetae start on segment 4 and continue for 17 segments. Uncini start on segment 5 and are avicular with numerous denticles above the main fang. Glandular ventral pads present on the thorax. Uncigerous pinnules in abdomen expanded dorsally.

TYPE SPECIES: *Artacama proboscidea* Malmgren, 1866.

Artacama proboscidea Malmgren, 1866 (fig. 36.6.d-g)

Artacama proboscidea Malmgren, 1866: 394; Hesse, 1917: 194, pl 2 fig. 13; Day, 1963a: 437.

Tentacular lobe (fig. 36.6.d) small and horseshoe-shaped with a dorsal indentation. Tentacles very short. No eye-spots. A large conical proboscis formed by the projecting lower lip and covered with numerous conical papillae. Segments 2 and 3 flanged but without real lateral lobes. Three pairs of short filiform branchiae on segments 2-4, each in the form of a tuft of simple filaments arising from a basal stump. A well developed nephridial papilla on segment 3 below the gill and smaller ones on segments 6, 7, 8 and 9 postero-ventral to the notopodia. Seventeen bundles of notosetae starting on segment 4. Uncini start on segment 5 and are arranged in double rows on the posterior thorax. Eleven glandular ventral pads. Abdomen with numerous segments bearing expanded and pedunculate uncigerous pinnules with uncini restricted to part of the ventral margin.

Notosetae (fig. 36.6.g) are winged capillaries of two lengths and end in fine,

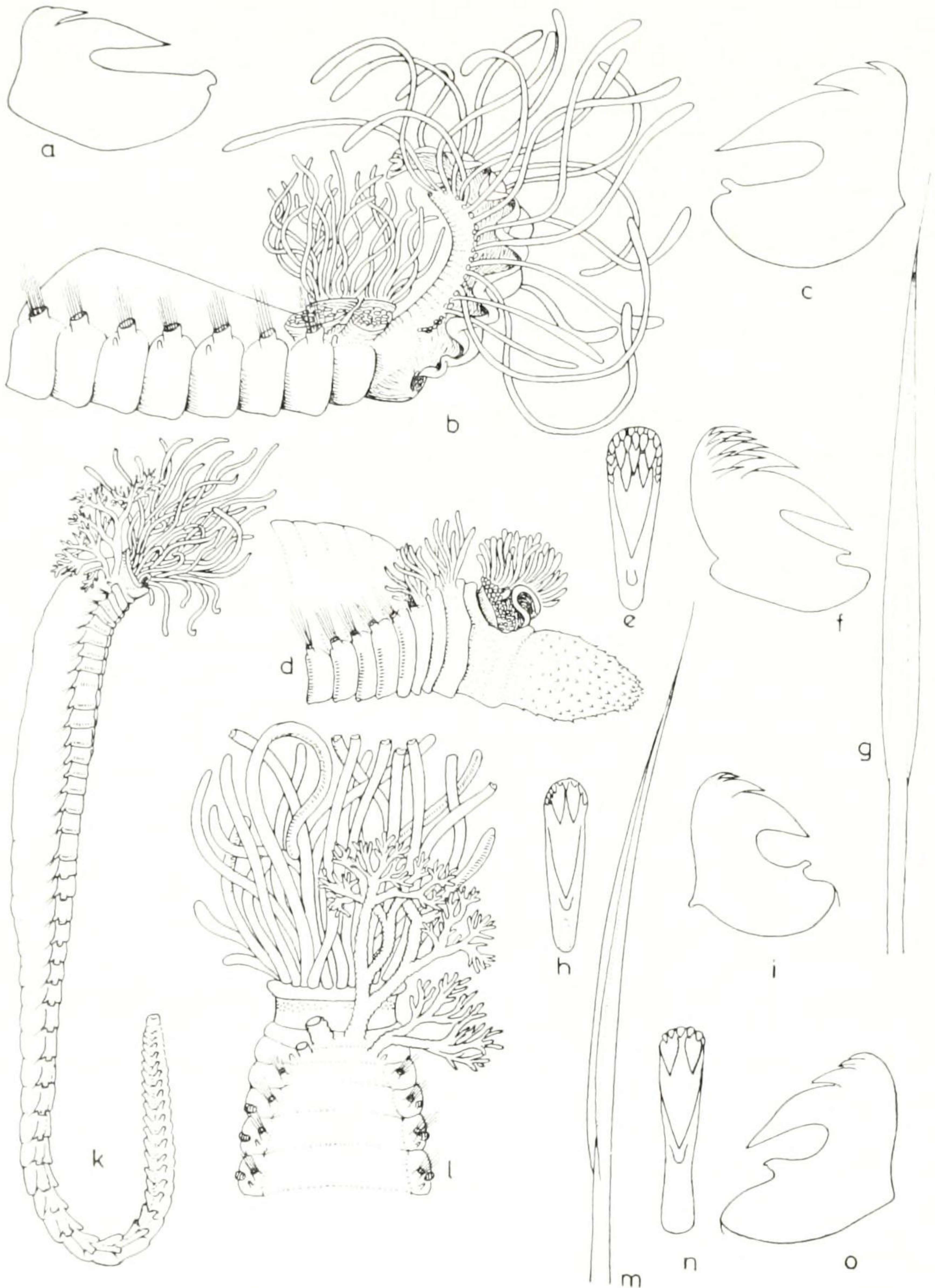


FIG. 36.6. *Thelepus setosus*. (A) Uncinus. *Telothelepus capensis*. (B) Anterior end. (C) Uncinus. *Artacama proboscidea*. (D) Anterior end. (E, F) Edge-on and profile of uncinus. (G) Short type of notoseta. *Nicolea venustula*. (I, J) Edge-on and profile of uncinus. *Nicolea macrobranchia*. (K) Entire worm (twice life size). (L) Anterior end. (M) Notoseta. (N, O) Edge-on and profile of uncinus.

smooth tops. Uncini (fig. 36.6.e, f) are small and avicular with a short base and a cap of about 20 denticles above the main fang arranged in four alternating rows. The attachment button is relatively large.

TYPE LOCALITY: Spitzbergen.

RECORDS: Cape (32/17/d).

DISTRIBUTION: Arctic (s, d); boreal North Atlantic (s); Bering Sea (s); N.W. Japan (s); subantarctic (s, d).

NICOLEA Malmgren, 1866

Tentacular lobe short and collar-shaped with numerous long tentacles and many eye-spots. Two pairs of branched gills on segments 2 and 3. No lateral lobes on segments 2-4. Notosetae are winged capillaries with smooth tips which start on segment 4 and extend over 15 to 40 segments. Uncini avicular with a close-set cap of denticles above the main fang. They start on segment 5 and are set in alternate rows back to back on a number of thoracic segments. Nephridia separate and subequal on either side of diaphragm.

TYPE SPECIES: *Terebella venustula* Montagu, 1818.

KEY TO SPECIES

- | | | |
|---|--|-------------------------|
| 1 | Seventeen segments with notosetae | <i>N. venustula</i> |
| - | Twenty-five to forty segments with notosetae | <i>N. macrobranchia</i> |

Nicolea venustula venustula (Montagu, 1818) (fig. 36.6 i-j)

Terebella venustula Montagu, 1818: 344, pl. 13 fig. 2.

Nicolea venustula: Fauvel, 1927: 260, fig. 90 a-f.

Body up to 50 mm. long. Tentacular lobe with numerous ocelli. Seventeen segments with notosetae. Two pairs of long, branched gills. Thirteen to seventeen ventral pads. Nephridial papillae on segments 3, 6 and 7. Uncini (fig. 36.6.i, j) with two irregular arcs of denticles above the main fang according to the formula MF: 2-4: 3-5. Rows of uncini on the abdomen abruptly shorter than those on the thorax and are borne on pinnules which have small superior papillae. Colour brick red spotted with white.

TYPE LOCALITY: South coast of Devon, England.

RECORDS: South West Africa (26/15/i); Cape (from 31/16/d and 34/18/s, d to 33/27/s); Natal (30/30/s); Mocambique (24/34/s); Madagascar (s).

DISTRIBUTION: Atlantic from Greenland (s, d) and Scotland (s) south to the Canary Is. (i) and Senegal (s, d); Mediterranean; Red Sea; Behring Sea to north Japan.

Nicolea venustula africana Augener, 1918

Nicolea venustula var. *africana* Augener, 1918: 524, pl. 7 fig. 242.

Generally similar to the stem form but the uncigerous pinnules on the abdomen have a cirriform dorsal appendage replacing the superior papillae.

TYPE LOCALITY: Ivory Coast, western Africa.

DISTRIBUTION: Ivory Coast, Angola (s).

Nicolea macrobranchia (Schmarda, 1861)
(fig. 36.6.k-o)

Terebella macrobranchia Schmarda, 1861: 42, pl. 24 fig. 198.

Nicolea macrobranchia: Augener, 1918: 527, pl 7 fig. 232-3, text-fig. 89.

A large species reaching 100 mm. (fig. 36.6.k). Tentacular lobe (fig. 36.6.l) with numerous long tentacles and many eye-spots. The first gill much larger than the second. Twenty-five to forty segments with smooth-tipped notopodial capillaries (fig. 36.6.m). Eighteen ventral pads to setiger 17, some with transverse incisions. Long rows of uncini on the thorax and short ones on the abdomen with an abrupt change at setiger 18. Individual uncini (fig. 36.6.n, o) with few teeth according to the formula MF: 2-4: 3-5.

TYPE LOCALITY: Cape of Good Hope.

RECORDS: South West Africa (22/14/i and 26/15/i, s); Cape (from 29/16/i to 34/18/i, s, 34/23/e, i and 32/28 i); Natal (30/30/i).

DISTRIBUTION: Endemic.

PISTA Malmgren, 1866

Tentacular lobe short, swollen and collar-like with numerous long tentacles. Eye-spot present or absent. Lateral lobes on segments 2-4. One to two pairs of branched gills on segments 2-3. Notosetae start on segment 4 and continue for 15 to 24 segments. They have well developed wings and, in most cases, smooth tips. Uncini start on segment 5 and the first one or two rows usually have posteriorly elongated bases but subsequent ones are avicular and arranged in two rows face to face. Distinct ventral pads. Nephridium on segment 3 small or absent but large separate ones are present in segments 6 and 7 behind the diaphragm.

TYPE SPECIES: *Amphitrite cristata* Müller, 1776.

KEY TO SPECIES

- | | | |
|---|---|--------------------------------|
| 1 | Branchiae with filaments in closely packed whorls at the end of a naked trunk (fig. 36.7.e) | 2 |
| - | Branchiae with filaments which are dichotomously branched (fig. 36.8.b). (Two pairs of branchiae) | 4 |
| 2 | Uncini of the first row without basal shafts (fig. 36.7.c). A single pair of branchiae | <i>P. unibranchia</i> (p. 737) |
| - | Uncini of the first row with basal shafts (fig. 36.7.d). Two pairs of branchiae | 3 |

- 3 Branchial trunks shorter than the terminal bunch of filaments (fig. 36.7.e) *P. brevibranchia* (p. 737)
 - Branchial trunks longer than the terminal bunch of filaments (fig. 36.7.h) *P. cristata* (p. 738)
 4 Uncini of the first row without basal shafts (fig. 36.7.n) *P. macrolobata* (p. 738)
 - Uncini of the first row with basal shafts 5
 5 Seventeen segments with notosetae. Neck of uncinus bears no striated lobe 6
 - Eighteen to twenty-four segments with notosetae. Neck of uncinus short and bears a
 striated lobe *P. foliigera* (p. 740)
 6 Neck of uncinus from first row obviously elongated and shaft tapered (fig. 36.8.c)
P. quadrilobata (p. 740)
 - Neck of uncinus from first row not elongated and shaft slender not tapered (fig. 36.8.k)
P. fasciata (p. 742)

N.B. A doubtful species has been omitted - *P. cristata* var. *capensis* with two pairs of gills and a single tooth above the main fang.

Pista unibranchia Day, 1963
(fig. 36.7.a-c)

Pista unibranchia Day, 1963a: 438, fig. 11 f-h.

A small species about 10 mm. long. Tentacular lobe (fig. 36.7.a) collar-shaped with few eye-spots or none. Segments 2 and 3 with swollen, glandular lateral lobes which almost encircle the anterior end. Small lateral lobes on segment 4. A single median dorsal gill on segment 2 with a naked trunk and a pom-pom of short filaments arranged in six to eight whorls. Seventeen segments with notosetae starting on segment 4. Fifteen segments with ventral pads. Uncini start on segment 5 and are arranged in alternating rows on the posterior thorax. About 26 long abdominal segments with small uncigerous pinnules. Notoetae are broad-winged capillaries with smooth tips. Uncini (fig. 36.7.b, c) with rounded bases which lack shafts even in the first row. Main fang stout and surmounted with four irregular arcs of close set denticles giving the approximate formula MF: 4: 5: 7: 10.

TYPE LOCALITY: False Bay, South Africa.

RECORDS: Cape (34/18/s).

DISTRIBUTION: Endemic.

Pista brevibranchia Caullery, 1915*
(fig. 36.7.d-g)

Pista brevibranchia Caullery, 1915: 76. Caullery, 1944: 152, fig. 121.

Body about 30 mm. long. Buccal segment (fig. 36.7.e) with fairly small lateral ridges and a stout curved ventral lip. Segment 4 with small dorso-lateral lobes, segment 3 with large lateral lobes which cover most of segment 2, so that only small ventro-lateral lobes of segment 2 are visible. Two pairs of branchiae of which one is often missing and the other enlarged. Each gill consists of a stout trunk and a slightly longer bunch of spirally arranged filaments. Seventeen segments with

*Close to *P. cristata* and *P. typha*.

notosetae. First row of uncini with long shafts (fig. 36.7.d); succeeding uncini with shorter shafts (fig. 36.7.g) and four to five denticles above the main fang when seen in profile. An edge-on view (fig. 36.7.f) shows four to five arcs of denticles above the main fang giving a dental formula of MF : 3-4 ; 4-5 : 4-5 : ca. 12.

TYPE LOCALITY : Malay seas.

RECORDS : Mocambique (26/32/i).

DISTRIBUTION : Indonesia (d, vd, a).

Pista cristata (Müller, 1776)
(fig. 36.7.h-j)

Amphitrite cristata Müller, 1776 : 216.

Pista cristata : Fauvel, 1-27 : 266, fig. 93 a-g. Day, 1963 : 369.

Body up to 60 mm. long. Tentacular lobe (fig. 36.7.h) short and collar-shaped with many tentacles but no eye-spots. A hood-shaped upper lip. Buccal segment with a straight lower lip notched in the middle and a pair of distinct, rectangular, lateral lobes. Segment 4 with rudimentary dorso-lateral lobes. Segment 3 with large wing-like lateral lobes which cover the sides of segment 2 ; below this segment 2 gives rise to a small but prominent pair of ventro-lateral lobes. Two pairs of branchiae each with a long naked trunk and a shorter terminal bunch of filaments arranged in whorls. Body of 70-100 segments of which 17 bear smooth-tipped notosetae. Nephridial papillae on segments 6 and 7. Seventeen to twenty ventral pads. Uncini (fig. 36.7.j) avicular with rounded bases and numerous denticles above the main fang (according to the formula MF : 5-6 : 4-5 : 12-14). Uncini of the first six to ten rows with long shafts (fig. 36.7.i). Abdominal uncini without shafts and borne on well marked pinnules.

TYPE LOCALITY : Norway.

RECORDS : Cape (32/17/d, 33/16/a, 34/16/a, 34/18/s) ; Natal (29/31/s).

DISTRIBUTION : Arctic ; Atlantic from Sweden (d), North Carolina (s) to Gulf of Mexico (s), English Channel (i, s), Senegal (s), Angola (s), Magellan area (i) ; Mediterranean ; North Pacific from Japan to Behring Sea.

Pista macrolobata Hesse, 1917
(fig. 36.7.k-n)

Pista macrolobata Hesse, 1917 : 157, pl. 2 fig. 4, text-fig. 36 ; Fauvel, 1932 : 229, text-fig. 39.

Length about 25 mm. Tentacular lobe without eye-spots. Buccal segment with a pair of very large square lateral lobes extending forwards as a sheath to the tentacles (fig. 36.7.k). Second segment with a small pair of ventro-lateral lobes which are absent in juveniles ; third segment with a pair of thick lateral lobes often reflected back ; fourth segment with a pair of rudimentary lateral lobes or none at all. Two pairs of dichotomously branched gills. Small nephridia on segment 3

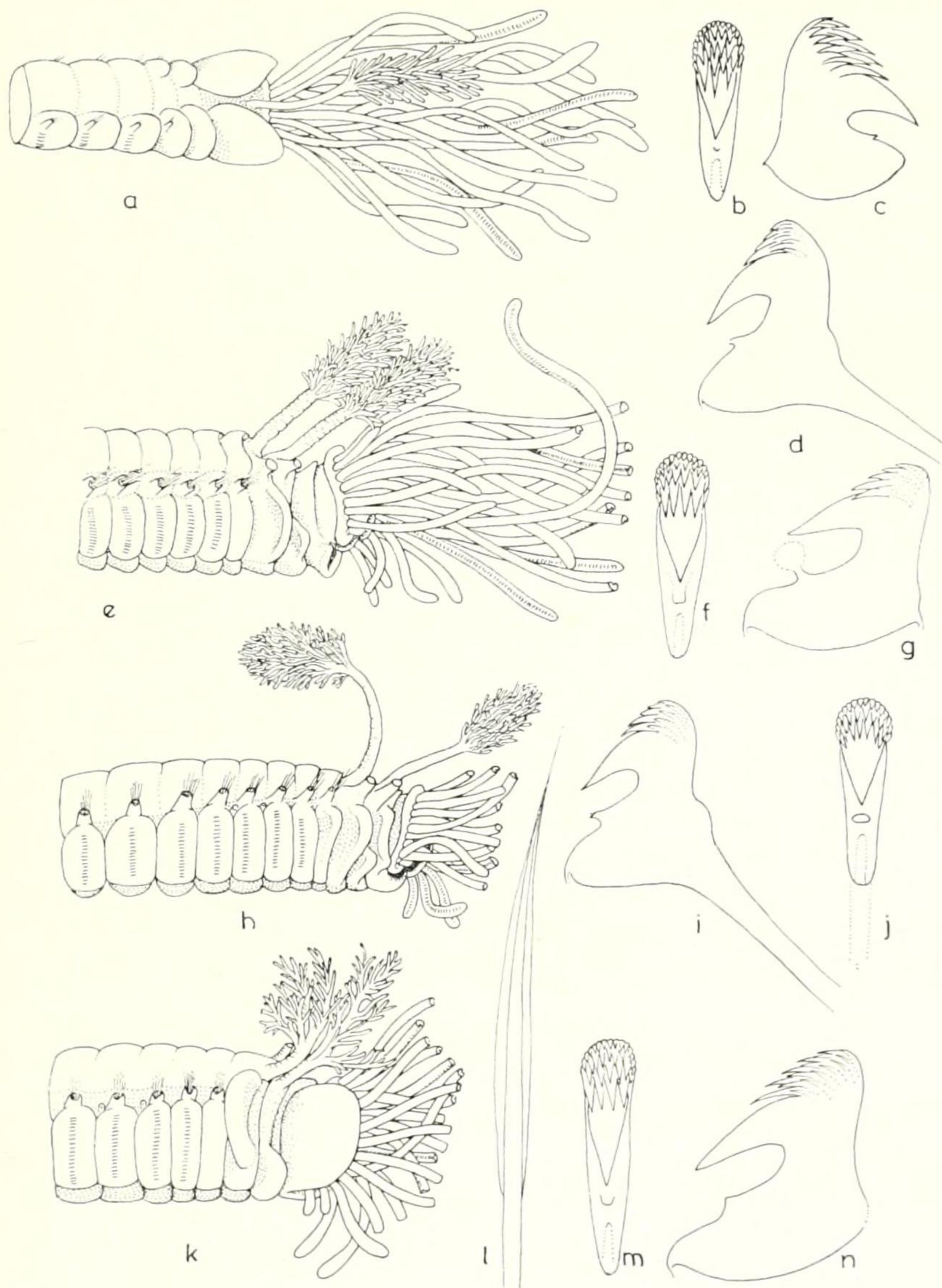


FIG. 36.7. *Pista unibranchia*. (A) Dorso-lateral view of anterior end. (B, C) Edge-on and profile of uncinus of first row. *Pista brevibranchia*. (D) Profile of uncinus of first row. (E) Anterior end. (F, G) Edge-on and profile of uncinus from 12th setiger. *Pista cristata*. (H) Anterior end. (I, J) Profile and edge-on view of uncinus from sixth setiger. *Pista macrolobata*. (K) Anterior end. (L) Winged capillary seta. (M, N) Edge-on and profile of uncinus from first row.

and large ones on segments 6 and 7. About 12 ventral pads. Seventeen segments bear smooth-tipped notopodial capillaries (fig. 36.7.l). Uncini (fig. 36.7.m) with a close-set cap of long denticles above the main fang according to the formula MF : 4-6 : 4-9 : ca 5 : ca 12. Uncini of the first row (fig. 36.7.n) lack shafts and are similar to those of succeeding segments. Abdominal uncini on square pinnules.

TYPE LOCALITY : Bonin Is., Pacific.

RECORDS : Mocambique (26/32/i, s, d) ; Madagascar (s).

DISTRIBUTION : Japan ; Red Sea.

Pista foliigera Caullery, 1915
(fig. 36.8.f-j)

Pista foliigera Caullery, 1915 : 72 ; Fauvel, 1919 : 451, pl. 17 fig. 80, text-fig. 9.

Body about 50 mm. long for 120 segments. Tentacular lobe (fig. 36.8.f) with reddish-brown tentacles and numerous eye-spots. Buccal segment with ventro-lateral lobes and a well-developed lower lip. Second segment telescoped and with small lobes or none at all. Third segment with large, wing-like lateral lobes. Fourth segment without obvious lateral lobes. Two pairs of dichotomously branched gills with relatively few, stout, terminal branches. Fourteen ventral pads. Nephridial papillae on segments 3-8. Eighteen to twenty-four segments with notosetae of two types. The longer forms are normal winged capillaries with smooth tips and the shorter forms (fig. 36.8.j) have finely spinulose tips ; these are better marked on posterior segments. Uncini of the first two rows (fig. 36.8.g) large with short broad heads, a fibrillar attachment lobe below the main fang which disappears in KOH and three arcs of teeth above the main fang giving the formula MF : 2 : 5 : 6-8 ; shafts very long and broad. Subsequent uncini avicular (fig. 36.8. h, i) ; abdominal uncini on short ventro-lateral pinnules.

TYPE LOCALITY : Celebes.

RECORDS : Cape (from 33/18/i and 34/18/i, s to 34/23/s, d and 32/28/i) ; Natal (31/29/i) ; Madagascar (s).

DISTRIBUTION : Madagascar (i) ; East Indies ; tropical western Africa (i, s).

Pista quadrilobata (Augener, 1918)
(fig. 36.8.a-e)

Nicolea quadrilobata Augener, 1918 : 532, pl. 6 fig. 183, pl. 7 figs. 226-227, text-fig. 90.

Pista qolora Day, 1955 : 436, fig. 5 g-k.

Pista quadrilobata : Day, 1961 : 532, fig. 13 e.

Body (fig. 36.8.a) slender, gently tapering and about 35 mm. long. Tentacular lobe collar-shaped with short orange tentacles and eye-spots. Buccal segment (fig. 36.8.b) with large lateral lobes united ventrally and extending forward as a sheath for the tentacles. Second segment (first branchiferous) telescoped and with small ventro-lateral lobes or none at all. Third segment with large, wing-like lateral

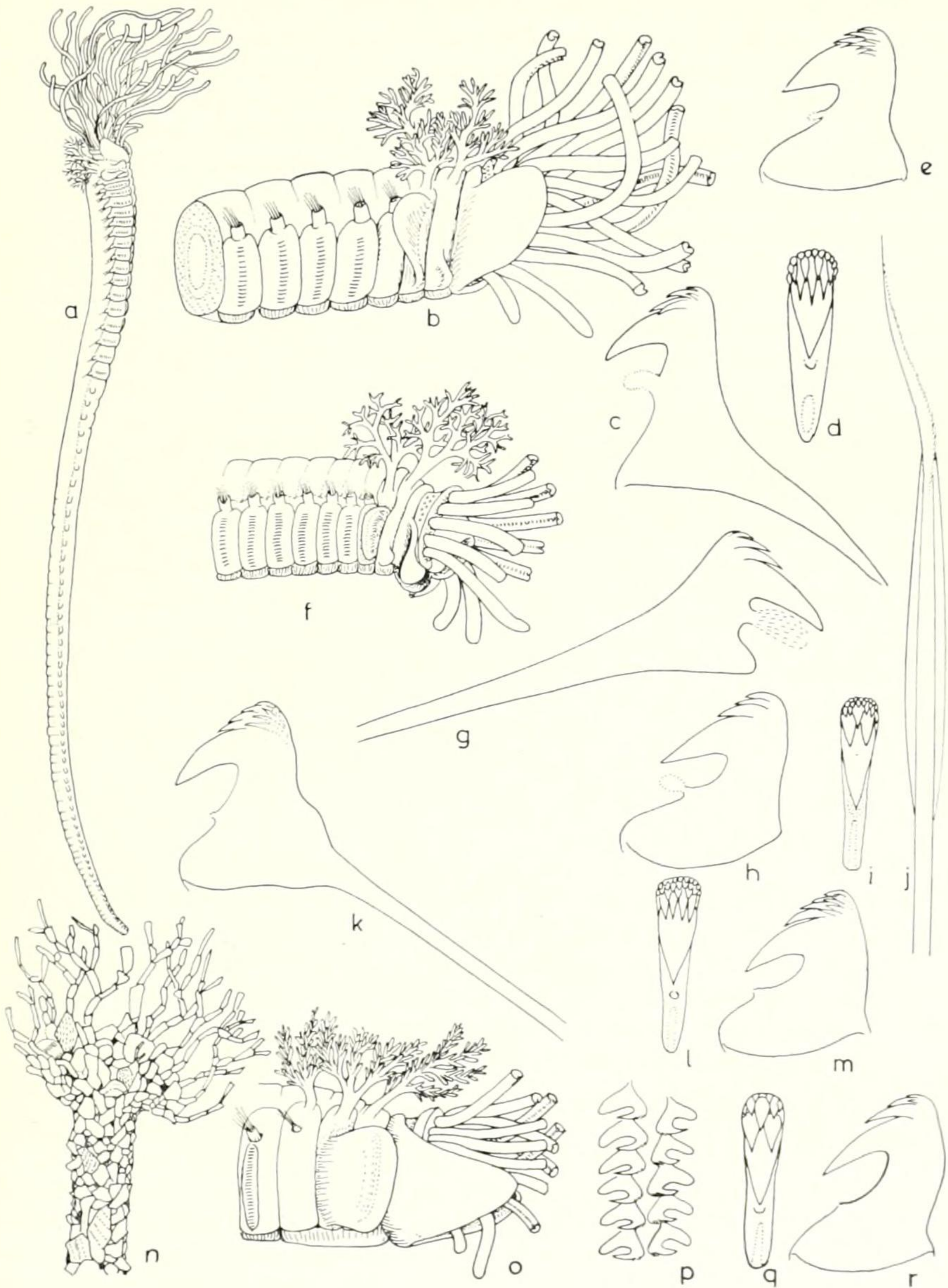


Fig. 36.8. *Pista quadrilobata*. (A) Entire worm (twice life size). (B) Anterior end. (C) Uncinus from first row. (D, E) Edge-on view and profile of uncinus from 10th setiger. *Pista foliigera*. (F) Anterior end. (G) Uncinus from first row. (H, I) Profile and edge-on view of uncinus from 16th setiger. (J) Short form of notoseta with spinulose tip from 16th setiger. *Pista fasciata*. (K) Uncinus from second row (after Fauvel, 1932). (L, M) Edge-on and profile of uncinus from abdomen (after Marenzeller, 1885). *Lanice conchilega*. (N) Top of tube. (O) Anterior end. (P) Arrangement of uncini on posterior thoracic segment. (Q, R) Edge-on view and profile of thoracic uncinus.

lobes. Two pairs of dichotomously branched gills. Seventeen segments with smooth-tipped notopodial capillaries. Eighteen ventral pads starting from the first branchiferous. Nephridial papillae not evident. Uncini avicular, those of the first two rows (fig. 36.8.c) having long straight necks, relatively few teeth according to the formula MF : 2-3 : 4-7, and long, markedly tapered shafts. Later uncini (fig. 36.8.d, e) with more teeth (formula MF : 2-3 : 10-12) but no shafts. Abdominal uncini borne on square pinnules.

TYPE LOCALITY : Swakopmund, South West Africa.

RECORDS : South West Africa (22/14/i, 26/15/s and 28/16/s) ; Cape (from 32/18/s and 34/18/s to 32/28/i, s).

DISTRIBUTION : Endemic.

Pista fasciata (Grube, 1869)
(fig. 36.8.k-m)

Terebella (Phyzelia) fasciata Grube, 1869 : 513 ; Ehlers, 1908 : 148.

Pista fasciata : Marenzeller, 1884 : 6, pl. 1 fig. 4 ; Fauvel, 1932 : 228, text-fig. 38.

Length 58 mm. for 131 segments. Tentacles short and stout. Buccal segment with large lateral lobes ; second segment with small ventro-lateral lobes or none at all ; third segment with lateral lobes one-third the size of those on the buccal segment. Two pairs of stout, dichotomously branched gills one of which is often lost. Seventeen segments with smooth-tipped winged capillaries. Fifteen ventral pads starting on the first branchiferous segment. Uncini of all thoracic segments (fig. 36.8.k) have slender but straight and well marked shafts ; abdominal uncini (fig. 36.8.l, m) without shafts. Crest of uncinus with a close set cap of denticles giving the approximate formula MF : 4 : 7 : ca 12.

TYPE LOCALITY : Red Sea.

RECORDS : Cape (33/25/s).

DISTRIBUTION : Indo-Pacific (from Red Sea and Zanzibar (d) ; Bay of Bengal (d), Japan (s) to Alaska and S. California.

LOIMIA Malmgren, 1866

Tentacular lobe short and collar-like with eye-spots. Three pairs of branched gills on segments 2-4. First few segments with lateral lobes. Notosetae with smooth tips start on segment 4 and extend over 17 segments. Uncini start on segment 5 and are in double rows back to back on the posterior part of the thorax. Each uncinus is pectinate with a single vertical series of teeth above the main fang. Ventral pads present. Nephridial papillae on segments 6-8. Nephridia small anterior to diaphragm, large and united behind it.

TYPE SPECIES : *Terebella medusa* Savigny, 1820.

Loimia medusa (Savigny, 1820)
(fig. 36.9. a-e)

Terebella medusa Savigny, 1820: 95. 8

Loimia medusa: Fauvel, 1953: 416, fig. 218 a-f.

Length up to 250 mm. for 200 segments. Tentacular lobe short and collar-like (fig. 36.9.a). Eye-spots present. Tentacles long, often banded with purple. First branchia often larger than the other two. Buccal segment with a large membranous lower lip. Segments 2 and 3 fused with a horizontal membranous lateral lobe and a large united ventral pad below. Well marked ventral pads up to setiger 15. Seventeen segments bear narrow-winged capillaries with smooth tips (fig. 36.9.e). Uncini pectiniform with a single vertical series of about five to six teeth (fig. 36.9. c, d). The uncini are in double rows back to back on the posterior thorax (fig. 36.9.b) and the rows are abruptly shortened at the end of the thorax and on the posterior abdomen they are borne on square pinnules.

TYPE LOCALITY: Gulf of Suez.

RECORDS: Cape (34/18/s, 34/22/s, 34/23/d); Natal (30/30/i and 29/32/d to 27/32/i); Mocambique (26/32/i and 23/35/e, i, s); Madagascar (s).

DISTRIBUTION: English Channel (e, i, s); North Carolina, U.S.A. (s); West Indies (s); tropical Indian Ocean (i, s, d); Red Sea (i); Pacific (Japan and S. California).

LANICE Malmgren, 1866

Tentacular lobe short and collar-shaped with numerous long tentacles and eye-spots. Three pairs of branched gills on segments 2-4. Lateral lobes on the first three segments. Smooth-tipped notopodial capillaries start on segment 4 and are present on a total of 17 segments. Uncini start on segment 5. They are avicular with irregular transverse arcs of denticles above the main fang, and are set in two rows back to back on the posterior thorax (fig. 36.8.p). Ventral pads more or less continuous. Nephridia small in front of diaphragm, large and united behind it. Tube with the mouth flattened and fringed with stringy projections (fig. 36.8.n).

TYPE SPECIES: *Nereis conchilega* Pallas, 1766.

Lanice conchilega (Pallas, 1766)*
(fig. 36.8.n-r)

Nereis conchilega Pallas, 1766: 131, pl. 9 figs. 14-22.

Lanice conchilega: Fauvel, 1927: 255, fig. 88 a-h.

Lanice wollebaeki Caullery, 1944: 125, fig. 99; Day, 1951: 59.

Body large and soft with a swollen thorax and slender abdomen. Length up to 30 cm. Tentacular lobe with eyes sometimes present. Upper lip pronounced. Buccal segment (fig. 36.8.o) with very large ventro-lateral lobes sometimes continuous ventrally forming a sheath for the tentacles. No lobes on segment 2. Large

*Although the bodies and the setae of specimens from southern Africa agree in detail with those from Europe, the tube is not muddy but is composed of large shell fragments and is attached to rocks.

square lateral lobes on segment 3 which cover segment 2. Three pairs of equal gills with short trunks on segments 2-4. Fourteen to twenty ventral pads which are not distinct from one another and taper to a glandular streak. Nephridial papillae on segments 3 and 6-9. Uncini (fig. 36.8.q, r) avicular with three teeth when seen in profile but with three arcs of teeth when seen in face view according to the formula MF : 2 : 3-7. Abdominal uncini borne on long pinnules. Tube composed of mud and sand or shell fragments and has a fringed mouth (fig. 36.8.n).

TYPE LOCALITY : Holland.

RECORDS : Cape (from 34/18/s to 33/28/s); Natal (31/29/i and 30/30/i, s to 29/31/i,s); Mocambique (26/32/i and 23/35/s).

DISTRIBUTION : Atlantic (from Sweden (d) to the English Channel (i, s) and tropical west Africa (i, s, d)); Mediterranean; Persian Gulf (s); Southern California.

EUPOLYMNIA Verrill, 1900

Tentacular lobe short and collar-shaped with numerous tentacles. Eye-spots present. Three pairs of branched gills on segments 2-4. Lateral lobes on segments 2-4. Smooth-tipped notopodial capillaries start on segment 4 and extend over 17 segments. Uncini with anteriorly produced bases start on segment 5 and are set in alternating or double rows on the posterior thorax. Well marked ventral pads. Nephridia separate and not missing from segment 5.

TYPE SPECIES : *Amphitrite nesidensis* Delle Chiaje, 1825.

Eupolymnia nebulosa (Montagu, 1818) (fig. 36.9.f-h)

Terebella nebulosa Montagu, 1818 : 343, pl. 12 fig. 1.

Polymnia nebulosa : Fauvel, 1927 : 257, fig. 89 a-g; Fauvel, 1953 : 419, fig. 219 a-g.

Tentacular lobe (fig. 36.9.h) with numerous ocelli. Small lateral lobes on segments 2, 3 and often 4. Fourteen to fifteen ventral pads extending to setiger 13 and a narrow glandular streak after that. Winged notosetae with smooth tips start on segment 4 and extend over 17 segments. Uncini from segment 5, each with two large teeth and one to five denticles above the main fang in a close-set group according to the formula MF : 2 : 1-5 (fig. 36.9.f, g). Abdominal uncini borne on pinnules, which are abruptly shorter than the thoracic ones. Obvious nephridial papillae on segments 3, 4 and 5 posterior and dorsal to the notopodia. Body soft, skin thin with numerous white dots which disappear in alcohol.

TYPE LOCALITY : British seas.

RECORDS : South West Africa (28/16/s; Cape (from 31/16/d and 34/1/8/i, s to 32/28/i); Natal (30/30/s and 30/31/vd); Mocambique (26/32/i); Madagascar (s).

DISTRIBUTION : Atlantic (from Scotland (s) and the English Channel (i, s) to tropical western Africa (s, d) and the Falkland Is. (d)); Mediterranean (i, s); Red Sea (i); Persian Gulf (s); tropical Indian Ocean (i); Pacific (Japan).

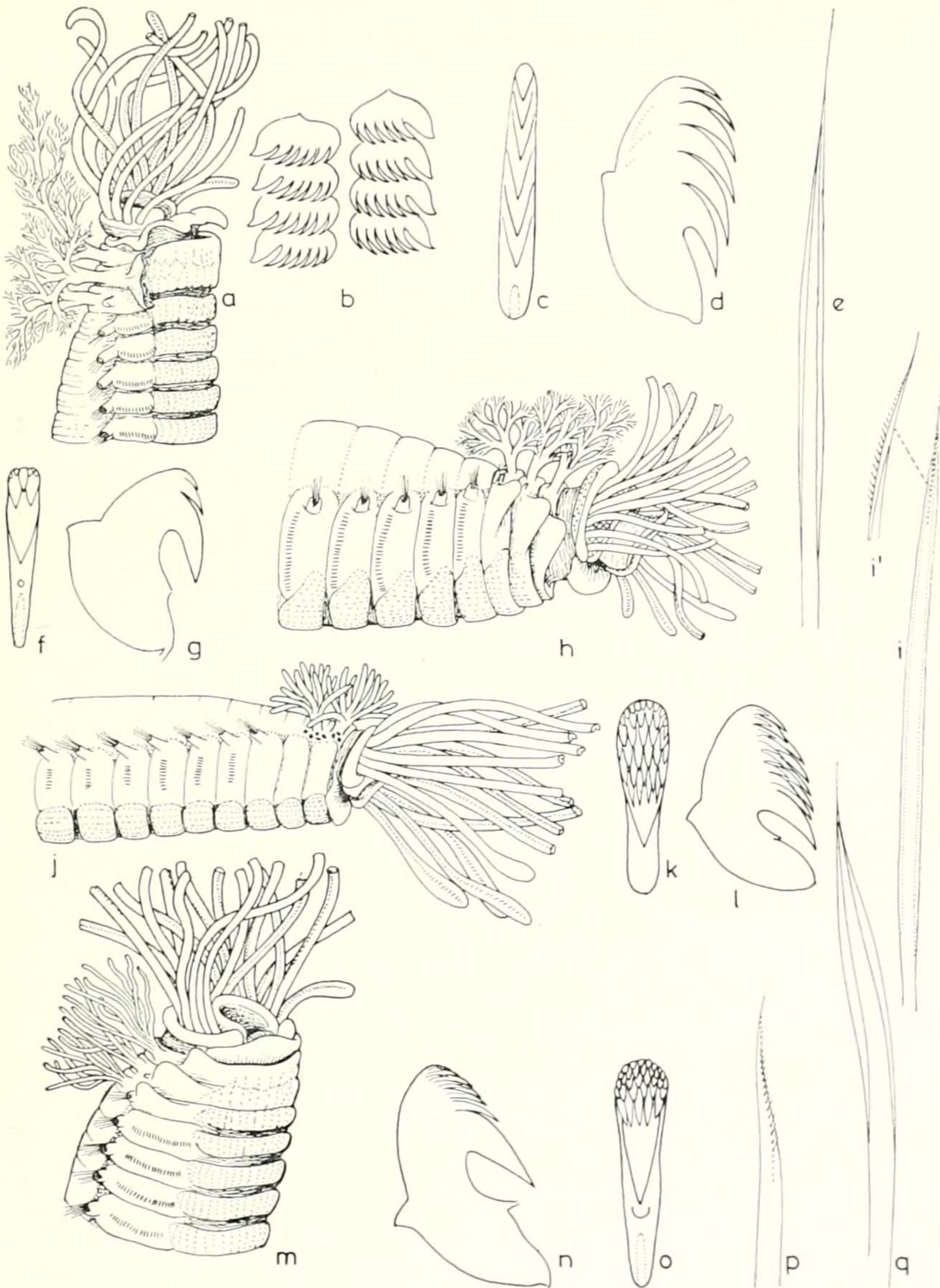


FIG. 36.9. *Loimia medusa*. (A) Anterior end. (B) Uncigerous double row from setiger 12. (C, D) Edge-on view and profile of thoracic uncinus. (E) Winged capillary seta. *Eupolymnia nebulosa*. (F, G) Edge-on view and profile of thoracic uncinus. (H) Anterior end. *Amphitrite pauciseta*. (I) Winged capillary seta and side view of tip. (J) Anterior end. (K, L) Edge-on view and profile of uncinus. *Amphitrite cirrata*. (M) Anterior end. (N, O) Profile and edge-on view of thoracic uncinus. (P) Tip of notoseta. (Q) Notoseta.

AMPHITRITE Müller, 1771

Tentacular lobe short and collar-like with numerous tentacles. Eye-spots seldom present. Two to three pairs of gills starting on segment 2. Gills either branched or as simple filaments arising from a basal stump. Lateral lobes present on segments 2-4. Notosetae are winged capillaries with finely serrated tips. They start on segment 4 (third branchiferous) and extend over 13-25 thoracic segments. Avicular uncini appear on segment 5 (setiger 2) and are arranged in alternating or double rows on posterior thoracic segments. Ventral pads well developed. Abdominal segments numerous and bear uncigerous pinnules.

TYPE SPECIES: *Amphitrite cirrata* Müller, 1771.

KEY TO SPECIES

- 1 Thirteen segments with notosetae. Branchial filaments arise from a main stem *A. pauciseta*
 - Seventeen segments with notosetae. Branchial filaments arise from a basal stump *A. cirrata*

Amphitrite pauciseta Day, 1963
 (fig. 36.9.i-l)

Amphitrite pauciseta Day, 1963a: 439, fig. 11 j-m.

Body up to 20 mm. long for 70 segments. Tube fragile. Tentacular lobe (fig. 36.9.j) with long tentacles. Eye-spots minute or absent. Obscure lateral lobes on segments 2, 3 and 4. Two pairs of gills on segments 2 and 3. Each gill as a tuft of digitiform filaments arising from a basal stump. A group of subdermal reddish spots visible in fresh specimens at the base of each gill. Thirteen segments with notosetae starting on segment 4. Uncini from segment 5 (setiger 2) and arranged in double rows on the posterior thorax. A large nephridial papilla on segment 3 lateral to the gill base. Ten glandular ventral pads.

Abdomen smoothly tapered with 40 or more segments bearing uncigerous tori anteriorly and small uncigerous pinnules near the end. Notosetae (fig. 36.9.i) with narrow blades and minutely denticulated tips. Uncini with short bases; in profile (fig. 36.9.l) they appear to have five teeth above the main fang but an edge-on view (fig. 36.9.k) shows irregular arcs approximating to the formula MF: ca 5: ca 7: ca 9: ca 12.

TYPE LOCALITY: 160 metres off Saldanha Bay, South Africa.

RECORDS: Cape (33/17/d).

DISTRIBUTION: Endemic.

Amphitrite cirrata Müller, 1771
 (fig. 36.9.m-q)

Amphitrite cirrata Müller, 1771 in 1776: 216; Fauvel, 1927: 251, fig. 86 i-o; Day, 1963: 368.

Body up to 100 mm. long for 85 segments. Tentacular lobe (fig. 36.9.m) without eye-spots. A prominent shelf-like lower lip. Three pairs of gills, each composed

of numerous simple filaments arising from a basal stump. Small lateral lobes on segments 2-4. Ten to twelve ventral pads. Seven pairs of nephridial papillae on segments 3, and 6-11. Notopodial capillaries on 17 segments from segment 4 onwards. Thoracic uncini from segment 5 and arranged in two rows from setiger 7 to 16. Abdominal uncini borne on projecting pinnules. Thoracic notosetae (fig. 36.9.p, q) are winged capillaries with minutely denticulate tips. Thoracic uncini (fig. 36.9.n, o) avicular with irregularly arranged cap of denticles above the main fang approximating to the formula MF : 4-5 : 5-6 : 8-10 10-15.

TYPE LOCALITY: Iceland.

RECORDS: Cape (34/16/a).

DISTRIBUTION: Arctic; North Atlantic from Greenland (i, s, d, vd, a) and Sweden (d); Azores (a), Senegal (s); Mediterranean; Behring Sea and North Pacific to Japan; Western Canada to central California.

TEREBELLA Linnaeus, 1767

Tentacular lobe short and collar-shaped. Eye-spots present. Two or three pairs of branched gills on segments 2-4. No lateral lobes on the first few segments. Notosetae start on segment 4 (third branchiferous) and continue for a variable number of segments. Notosetae have serrated tips. Uncini are avicular; they start on segment 5 (setiger 2) and are set in double or alternate rows face to face on the posterior thorax. The uncigerous tori are poorly marked on the abdomen and are ventral in position. Ventral pads well marked on the thorax. Posterior nephridia united by a pair of lateral canals.

TYPE SPECIES: *Terebella lapidaria* Linnaeus, 1767.

KEY TO SPECIES

- | | | |
|---|---|-----------------------|
| 1 | Two pairs of gills | <i>T. pterochaeta</i> |
| - | Three pairs of gills. (No spur at the base of the denticulate blade of the notosetae) | 2 |
| 2 | Notosetae stop 20-40 segments from the pygidium | <i>T. ehrenbergi</i> |
| - | Notosetae continue almost to pygidium | <i>T. schmardai</i> |

Terebella pterochaeta Schmarda, 1861 (fig. 36.10.a-f)

Terebella pterochaeta Schmarda, 1861: 43, text-figs. a-d.

Schmardanella pterochaeta: McIntosh, 1885: 449, pl. 53 fig. 1. pl. 27A.

Body (fig. 36.10.a) slender, evenly tapered, up to 100 mm. long. Head (fig. 36.10.b) with well marked upper and lower lips. Two pairs of gills with short, close-set branches. Twenty-eight to thirty-three segments with notosetae. About 16 ventral pads followed by a narrow streak of glandular tissue in a ventral groove along the abdomen. Uncini on low tori which decrease evenly in size after the first three and originate from ventral ridges on the abdomen. Notosetae of two lengths; anterior ones (fig. 36.10.e) with characteristic winged shafts and denticulate

tips which become proportionately larger on posterior segments until they form most of the blade (fig. 36. 10.f). No spur at the base of the denticulate blade. Uncini seen in profile (fig. 36.10.d) appear to have three to four teeth above the main fang but in face view (fig. 36.10.c) they show three to four irregular arcs of teeth; dental formula: MF : 2-4 : 5-7 : 8-10. Attachment button well developed.

TYPE LOCALITY : Cape of Good Hope.

RECORDS : South West Africa (22/14/i and 26/15/i, s); Cape (from 29/16/i and 34/18/i, s to 32/28/i); Natal (31/29/i to 29/31/i).

DISTRIBUTION : Senegal (?d); tropical Indo-west-Pacific from the Red Sea (i) to Indo-China and New Caledonia.

Terebella ehrenbergi Grube, 1870
(fig. 36.10.g-i)

Terebella Ehrenbergi Grube, 1870 : 511; Gravier, 1905b : 213, pl. 4 figs. 224-225; Hesse, 1917 : 188.

Three pairs of branched gills. Notosetae from segment 4 to within 20-40 segments from the pygidium. A large nephridial papilla on segment 3 between the bases of the first and second branchiae and small nephridiopores on segments 6-12. Thirteen ventral pads followed by a narrow mid-ventral glandular streak. Anterior notosetae (fig.36.10.i) have long, uniformly narrow wings and denticulate tips. Posterior ones lack the wings but the denticulate tip is then enlarged to form a spiral blade without a basal spur. Shorter notosetae with coarse teeth at the base of the blade. Uncini (fig. 36.10. g, h) with two to three arcs of denticles above the main fang giving the formula MF : 2-3 : 5-7. Attachment button obscure.

TYPE LOCALITY : Red Sea.

RECORDS : Mocambique (26/32/i and 26/33/d).

DISTRIBUTION : Tropical Indo-west-Pacific from the Red Sea (s) to Burma, Japan and New Caledonia (i).

Terebella schmardai Day, 1934
(fig. 36.10.j-n)

Terebella schmardai Day, 1934 : 69, fig. 13 a-e.

Body up to 50 mm. in length. Tentacular lobe (fig. 36.10.l) with well developed lips and eye-spots. Three pairs of short, branched gills. Notosetae from segment 4 almost to the pygidium. Inconspicuous nephridial papillae on segments 3, 6, 7, 8, 9. Ventral pads distinct on ten segments and then a narrow streak. Notosetae have well marked wings and serrated blades (fig. 36.10.j, k) which become fairly broad and markedly spiral but never have a spur at the base. Uncini (fig. 36.10.m, n)

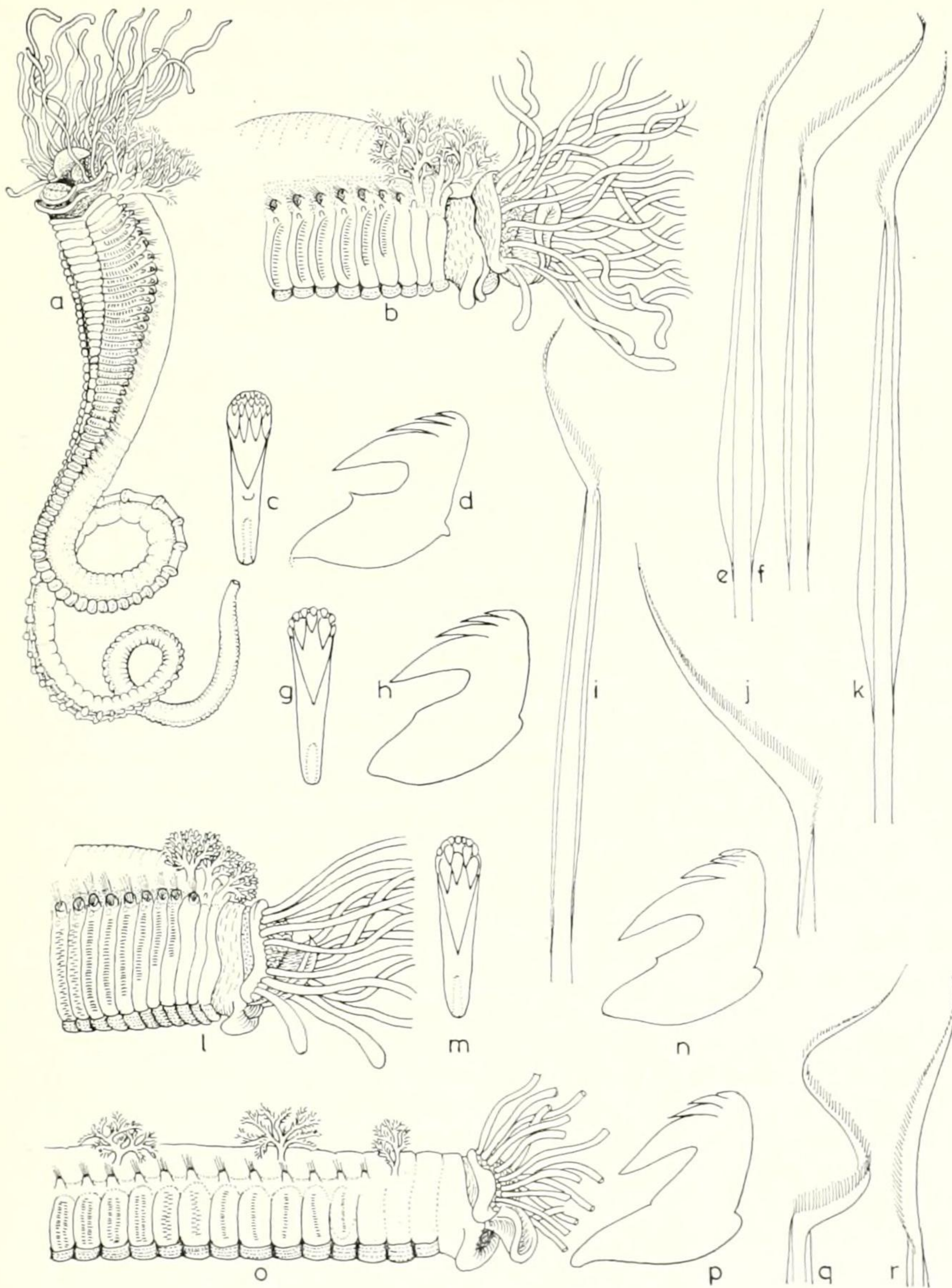


FIG. 36.10. *Terebella pterochaeta*. (A) Entire worm (three times life size). (B) Anterior end. (C, D) Edge-on view and profile of thoracic uncinus. (E) Anterior notoseta. (F) Posterior notoseta. *Terebella ehrenbergi*. (G, H) Edge on view and profile of thoracic uncinus. (I) Anterior notoseta. *Terebella schmardai*. (J) Blade of posterior notoseta. (K) Anterior notoseta. (L) Anterior end. (M, N) Edge-on view and profile of thoracic uncinus. *Terebellobranchia natalensis*. (O) Anterior end. (P) Thoracic uncinus. (Q) Tip of posterior notoseta. (R) Tip of anterior notoseta.

with about 12 denticles above the main fang arranged according to the formula : MF : 2-3 : 8-10. Attachment button poorly developed.

TYPE LOCALITY : False Bay, South Africa.

RECORDS : South West Africa (22/14/i to 28/16/i, s) ; Cape (from 29/16/i to 34/18/i, s and 34/24/d to 33/28/s).

DISTRIBUTION : Endemic.

TEREBELLOBRANCHIA Day, 1951

Generally similar to *Terebella* except for the arrangement of the branchiae ; there are three pairs of branched gills at intervals along the thorax.

TYPE SPECIES : *Terebellobranchia natalensis* Day, 1951.

Terebellobranchia natalensis Day, 1951 (fig. 36.10.0-r)

Terebellobranchia natalensis Day, 1951 : 58, fig. 8 b-e.

A small species less than 20 mm. long. No eye-spots. No lateral lobes on anterior segments (fig. 36.10.0). Thirteen ventral pads on segments 2-15, followed by a glandular ventral streak. Three pairs of branched gills on segments 3, 7 and 13. Notosetae from segment 4 and total 19 or more. Each has a denticulate tip (fig. 36.10.r) and in posterior segments the denticulate portion becomes long and spirally twisted (fig. 36.10.q). Uncini from segment 5, at first in a single row and later in two rows. Each uncinus (fig. 36.10.p) with a series of three denticles above the main fang when seen in profile but three to four arcs when seen in edge-on view. Attachment button not developed.

TYPE LOCALITY : Durban, South Africa.

RECORDS : Natal (30/30/i and 29/31/i).

DISTRIBUTION : No other records.